

216.2

Library of the Museum
OF
COMPARATIVE ZOÖLOGY,

AT HARVARD COLLEGE, CAMBRIDGE, MASS.

Founded by private subscription, in 1861.

~~~~~  
bought.

No. 7272.  
Nov. 10. 1879





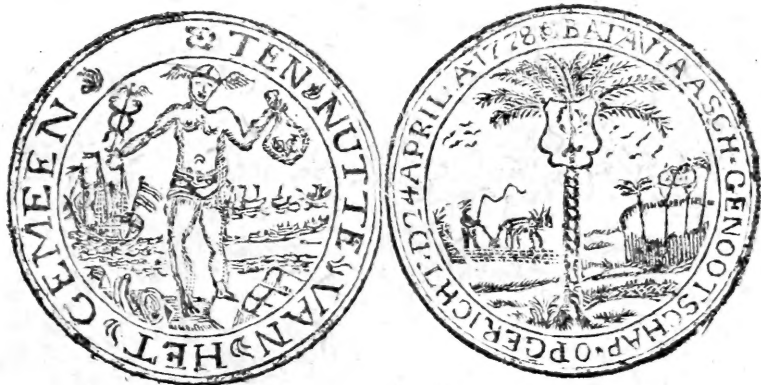


TRANSACTIONS  
OF THE  
*BATAVIAN SOCIETY*  
OF  
ARTS AND SCIENCES

---

VOL. VII.

---



*BATAVIA;*  
PRINTED BY A. H. HUBBARD,  
AT THE GOVERNMENT PRESS.

Sm 1814.

2. 10. 1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

1914

VERHANDELINGEN  
VAN HET  
BATAVIAASCH  
GENOOTSCHAP,  
DER  
KUNSTEN EN WETENSCHAPPEN.

---

VII. DEEL.

---



TE BATAVIA,  
GEDRUKT IN 'S GOUVERNEMENTS DRUKKERY

BY A. H. HUBBARD,

1814.

7. 11. 1917

11. 11. 1917

11. 11. 1917

11. 11. 1917

11. 11. 1917

11. 11. 1917

11. 11. 1917

11. 11. 1917



11. 11. 1917

11. 11. 1917

11. 11. 1917

# CONTENTS

OF THE SEVENTH VOLUME.

## PREFACE.

New Regulations for the Society.

List of the Members.

Discourse delivered at a Meeting of the  
Society on the 23d April 1813, by the  
Honorable T. S. RAFFLES, President.

Correspondence of the Society with the  
Right Honorable the EARL OF  
MINTO.

- I. Prize Answer to the Prize Question of  
the Society on "the most proper food  
for young Children, who are not  
suckled by their Mothers or Nurses,"  
by Cornelis Terne, M. D of Leyden.
- II. Report on the manners and customs of  
the inhabitants of the Mountain  
Brama, with a history of their origin,  
according to an account from a letter  
from Mr. Adriaan van Ryck.
- III. Chemical Analysis of a Volcanic Sand  
and Iron-ore, by T. Horsfield, M. D.

- IV. Letter on the Solo River, by the same.  
Letter describing a tour to the Eastern Districts of Java, by the same.
- V. Description of the *Crinum Asiaticum*,  
by T Horsfield, M. D.
- VI. Description of the *Gatip-tree*, by the  
same.
- VII. Chemical Analysis of the fruit of the  
*Rarak-tree*, by the same.
- VIII. On the *O-pas*, or Poison tree of Java,  
by the same.
- IX. Narrative of a Journey to examine the  
remains of an Ancient City and Tem-  
ples at Brambana in Java, by Lieu-  
tenant Colonel Mackenzie.
- X. Sketch of Borneo, by the late Dr. Leyden.

# INHOUD.

---

Dit VIIde Deel behelst behalve

**H**ET Voorberigt.

New Regulations for the Society.

Naamlyst der Leden.

Discourse delivered at a Meeting of the  
Society on the 23d April 1813, by  
the Honorable T. S. RAFFLES, Pre-  
sident.

Correspondence of the Society with  
the Right Honorable the EARL OF  
MINTO.

de volgende stukken.

- I. Bekroond Antwoord op de Pryspraak  
van het Genootschap, ter aanwyzing  
van *het beste voedsel voor jonge kin-  
deren, die niet van de Moeders of  
gewone Minnen gezoogd worden,*  
door CORNELIS TERNE, Med. Dr. te  
Leyden.
- II. BERIGT wegens de zeden en gewoonten  
der opgezetenen van den Berg Brama,  
en een VERHAAL hunner afkomst,  
volgens eenige opgaaf, uit een brief  
van den Heer ADRIAAN VAN RYCK.



- III. Scheikundige Ontleding van een Vulkansch Zand en Yzer-erts, door THOMAS HORSFIELD, Med. Dr.
- IV. Over de Rivier van Solo, een brief van den zelfden Schryver.  
REIS naar de Ooster-streken van Java, in gelyken brief.
- V. Beknopte Beschryving van het *Crinum Asiaticum*, door THOMAS HORSFIELD Med. Dr.
- VI. Beschryving van den *Gatip-boom*, door den zelfden.
- VII. Scheikundige Ontleding der Vruchten van den *Rarak-boom*, door den zelfden.
- VIII. On the Oopas, or Poison-Tree of Java, by TH. HORSFIELD, Med. Dr.
- IX. Narrative of a Journey to Examine the Remains of an Ancient City and Temples at Brambana in Java by Leiut. Col. C. MACKENZIE.
- X. Sketch of Borneo, by the late Dr. LEYDEN.

## VOORBERIGT.

---

**H**ET is reeds zoo lang geleden, dat het VIde Deel der Verhandelingen dezès Genootschaps in het licht verscheen, dat welligt geen VIIde Deel immer meer verwacht werd.—De redenen, van zoo lange vertraging zijn eenvoudig en natuurlijk: de Prijsvragen, die van tijd tot tijd waren opgegeven en bij herhaling voorgesteld, bleven doorgaans onbeantwoord; andere stukken werden ook niet ingeleverd, en de lust tot werkzaamheid verging onder bijkomende bijzondere noodlottigheden, die het Genootschap diep ten onder hielden.

Dirigerende Leden gaven echter den moed niet geheel op, en werden te rade in den jare 1800 bij de toenmalige Hooge Regering, als Opperdirecteuren eene poging te doen, om door eene eenvoudiger inrigting, minder ostentatie en bepaalder inzigten, aan het Genootschap een gemakkelijker bestaan, doelmatiger werkzaamheid en een gelukkiger ophouden zijner achting te verzekeren. Het liep aan tot Augustus 1802,

dat het ontwerp dezer verandering der Hooge Regering op Derzelver begeerte voorgedragen, na volle goedkeuring bekomen te hebben, door Dirigerende Leden, daar toe gemagtigd, in uitvoering gesteld en tot stand gebragt werd. De nieuwe Inrigting, voorafgegaan van een kort verslag der zaak en gevolgd van eene Naamlijst der toenmalige Leden van het Genootschap, naar de nieuwe ordening opgemaakt, werd te dier tijd afzonderlijk in druk gegeven; en het is, vooral nu, niet noodig, daar over te dezer plaats verder uit te wijden.

Het uitzigt toen ter tijd op eenen eindelijken en duurzamen vrede na zoo vele oorlogen en onrusten, welke haren nadeeligen invloed op ons Genootschap vooral niet minder dan eenige anderen geoefend hadden, vereenigde zich genoegeijk met den herlevenden moed en verwachtingen van Dirigerende Leden. Zelfen doorgaans, gelijk meest alle andere Leden alhier, aan een vast plaatselijk verblijf en drukke ambtsbezigheden gebonden, waren zij weinig in de gelegenheid, in den bepaalderen kring van beoefening, waartoe het Genootschap zijne bemoeijenissen beperkt had, door eigene nasporing en arbeid iets van aanbelang toe te brengen; dan ook des te genegener betoonden zij zich om

onder hunnen invloed en toezigt bekwame handen te werk te stellen, die meer opzettelijk en geheel konden toegewijd zijn aan de taak, welke bijzonder viel in de bedoelingen van het Genootschap.

De Heer Thomas Horsfield Med. Doct. uit Noord-Amerika herwaart gekomen en gunstig bekend wegens zijne kundigheden en ijver, was tot Lid gekoren, en ontdekte spoedig zulke dadelijke blijken van vlijt en bekwaamheid in Botanische onberzoekingen en proefnemingen, te gelijk met den volkomensten lust, om, onder de noodige aanmoediging en ondersteuning, ten dienste van het Genootschap, bijzonderst in de ontdekking van de medicinale planten van dit Eiland en de aanwijzing van dezelve krachten en gebruik opzettelijk werkzaam te zijn, dat Dirigerende Leden, overtuigd van de welwillenheid der Hooge Regering ter alle mogelijke bevordering van 's Genootschaps belangen en bedoelingen, de vrijmoedigheid gebruikten, om aan Hoogstdezelve den Botanicus Horsfield met gepaste aandringen zeer aan te bevelen, ten einde met een voegzaam middel van bestaan en verdere tot zijnen arbeid benoodigde beschikkingen en aanmoedigingen voorzien en begunstigd te worden.

Op deze voordragt, waar bij het Plan van werkzaamheid van den Heer Horsfield gevoegd was, behaagde het Hooggemelde Regering aan dezen Natuur-onderzoeker gedurende den tijd, dat hij naar het voorsz Plan ten dienste van het Bataviaasch Genootschap en deze Kolonie zou de werkzaam zijn, een vast traktement toe te leggen, een geschikt lokaal voor zijn verblijf en werkzaamheden aan te wijzen, en nog andere aanmoedigingen te bepalen.

In het volgende jaar 1804 bewerkten Dirigerende Leden, overeenkomstig den voorslag en verzoek van Dr. Horsfield, bij hen goedgekeurd, dat de Hooge Regering met gelijke bereidvaardigheid hem toestond eerst Tjeribon, en vervolgens de geheele Noordoost-kust van Java te bereizen tot het doen zijner nasporingen en verzamelingen, als mede de orders stelde tot gemakkelijkmaking dier reis, eenen Teekenaar uit het Samarangsche Marineschool hem toevoegde en het geheel ontwerp nog verder begunstigde.

Billijk staarde men bij het Genootschap vooruit naar de vrucht dezer pogingen, en voedde voornamelijk het gerekt verlangen naar een aantal nieuw ontdekte, kunstmatig beproefde en wel beschreven plantgewassen voor genees- en heilkundig gebruik in het eigen land, welke de-

zelve zoo rijkelijk voortbrengt ; dan het veld van onderzoek was zoo ruim en zoo nitlokkend voor den ondervermoeiden Natuur-onderzoeker, dat hij weldra zijne nasporingen buiten het oorspronkelijke Plan uitbreidde, en tot eene geheele Flora Javana uitstrekke, te gelijk niet verzuimende zulke andere onderzoekingen en waarnemingen betrekkelijk tot de Natuurlijke historie van dit Eiland, als de gunstige gelegenheid, waar in hij zich gesteld zag, zijnen weetlust en zijner nasporende vlijt doorgaans aanbood.

Van tijd tot tijd zond Dr. Horsfield aan Dirigerende Leden in, berigten van de taak en plaats en voortgang zijner verrigtingen, allen geschikt om hunne hope te vleijen met het vooruitzicht op eenen rijken voorraad van stof voor volgende verhandelingen van het Genootschap, en dit vooruitzicht scheen te vergoeden de nog onvoldane verlangens ten aanzien van de medicinale plantgewassen.

Intusschen had het Genootschap reeds vóór de gemelde reis van den Doctor en onder het voortzetten derzelve eenige losse Stukjes en Beschrijvingen van zijne pen ontvangen, nu gedeeltelijk in dit Deel voorkomende, die toen ter tijd allen met vrucht hadden kunnen uitgegeven worden, ware er niet een onoverkomelijke hin-

derpaal geweest, die alles in den weg stond, het gebrek namelijk aan de benoodigde Drukletters. Door den vorigen oorlog was de onderlinge verstandhouding met het Vaderland merkkelijk gestremd geweest: de vrede, die daarop volgde, die Dirigerende Leden zoo veel moed en hoop gaf, was helaas van korten duur; bij de uitbarsting van een nieuw en nog dreigender oorlogsvuur werd de teleurstelling haast verzeld van veel ontmoediging; er was aan geene nieuwe drukletters te komen; gedane eischen bleven onvoldaan, voldane door onderschepping verijld.

Geen wonder dat in zulke duisterheid der tijden, in zoo benarden en afgesneden toestand, waar in deze kolonie zich bevond, en onder het weg sterven van vele nutte Leden, die niet te herplaatsen waren, de lust der overblijvende kwijnde of vergong, en de Letteroefeningen meestal stilstonden.

Ondertusschen bleef Dr. Horsfield onder herhaalde maatregelen van het Hollandsch Gouvernement ten behoeve van het Genootschap zijne veel belovende taak voortzetten, tot dat eindelijk in September 1811, deze kolonie aan het Britsche gezag onderworpen werd.

Van deze omstandigheid teekent zich een nieuw tijdperk voor het Bataviasche Genoot-



schap. Gemakkelijk overtuigd van de aanleidende oorzaken van deszelfs verval en echter overreed van het groote voordeel, dat door de herstelling van dit Genootschap in vorige kracht van werking voor de wetenschappen en het gemeene nut konde ten wege gebragt worden, trok zich het nieuw gevestigd Gouvernement de zaak en belangen van het kwijnerd Genootschap met nadruk, en in de opwekkendste wijs aan.

De Heer Luitenant Gouverneur THOMAS STAMFORD RAFFLES, zelf een ijverig voorstander en gelukkig beoefenaar der wetenschappen, trad in de openlijke betrekking van Protector van het Bataviaasch Genootschap, op gedaan aanzoek van Dirigerende Leden, die tot deze vrijmoedigheid merkelijk waren aangevuurd door Deszelfs edelmoedige vaststelling van een goed bestaan voor den vaak gen: Dr. Horsfield, waar in zij een gegeven blijk van goedkeuring over hunne eigene pogingen te zijnen opzigt meerden te ontwaren.

Dadelijk ondervond het Genootschap den belangrijken invloed dezer nieuwe betrekking. Zijn Ed. stond aan het zelve gunstig toe het vrij en kosteloos gebruik van 's Gouvernements Drukkers, vereerde aan het zelve uit de Bibliotheek van het Gouvernement alle die boeken, welke

voor het gebruik van het Genootschap van dienst zijn konden, en, het gene bijzonder lustopwekkend en gewigtig was, bestemde allergunstigst een aanzienlijk en welgeschikt lokaal op den gezondsten stand, voor de vergaderingen, Boekerij en Verzamelingen van het Genootschap.

Onder deze gunstige vooruitzigten bij de gedane aanwinst van eenige verdienstelijke nieuwe Leden en verdere uitbreiding van derzelve getal, werd wederom eene nieuwe organisatie voor het Genootschap naar eene ruimer schaal en meer gelijkvormig aan de inrigting der Aziatische Societeit te Kalkutta opgemaakt en in werking gebragt, en alzoo de boven gewaagde van het jaar 1802 nu vervangen door de volgende

NIEUWE  
INRIGTINGEN  
VOOR HET  
**BATAVIASCHE GENOOTSCHAP,**  
VAN  
**KUNSTEN EN WETENSCHAPPEN,**  
ONDER DE ZINSPREUK,  
*Tot nut van 't Algemeen.*

1.—**HET** Bataviasche Genootschap der Kunsten en Wetenschappen opgerigt den 24 April 1778, onder de Zinspreuk, *Ten nut van 't*

*Algemeen*, zal onder de bijzondere bescherming van het Britsche Gouvernement blijven voortduren.

2.—Het algemeen nut is de bedoeling van het Genootschap in den bepaalderen kring zijner inzigten en bemoeijenissen: opheldering en uitbreiding der Natuurlijke historie, van talen, oudheden, zeden en gewoonten der Indische volken en andere bijzonderheden deze Landen betreffende bestemmen eigenaardig door plaatselijke betrekking het bijzonder doel van het Genootschap, welk tevens de bevordering van den Landbouw en andere aangelegenheden tot de welvaart der Volkplanting behoonende niet uit het oog zal verliezen.

3.—Bekende braafheid en eene zucht tot uitbreiding der Wetenschappen zal een genoegzaam vereischte zijn om als Lid te worden voorgesteld.

4.—Niemand zal als Lid van het Genootschap worden aangenomen, dan die daartoe zijne genegenheid zal hebben te kennen gegeven.

5.—Deze door den President of een der Leden voorgesteld zal in de volgende vergadering

met eene meerderheid van twee derden der bij een zijnde Leden aangenomen worden.

6.—De contributie zal zijn jaarlijks tien Spaansche matten, te betalen voor ultimo Januarij, en het Entreegeld mede tien Spaansche matten, of zoo veel meer, als ieder nieuw Lid naar zijn vermogen en genereusiteit zal verkiezen te geven.

7.—Die onwillig is en blijft aan de bepalingen, bij het vorig artikel gemaakt, te voldoen, zal van zijn Lidmaatschap ontslagen zijn.

8.—Het Genootschap zal over zijn fonds beschikken tot zodanige uitgaven, als hetzelve, zoo voor huishoudelijk bestier, als het aankopen van boeken, van Phijsische instrumenten en andere zaken tot bevordering van deszelfs oogmerk zal noodig oordeelen, waar in steeds de meeste zuinigheid zal behartigd worden.

9.—Alle Beminnaars van Kunsten en Wetenschappen, welke de voortbrengselen van hunnen geest het Genootschap inzenden, zullen daar voor de erkentenis van hetzelve ontvangen.

10 —Ook zal het Genootschap in dank aannemen geschenken in boeken, manuschripten, rariteiten en alles wat voor het Kabinet van Naturalia belangrijk kan wezen.

11.—Het Genootschap is bereidwillig om met andere Genootschappen en bijzondere Geleerden correspondentie te houden.

12.—Tot bevordering van het heilzaam oogmerk van het Genootschap en deszelfs werkzaamheden zullen voortaan Algemeene Vergaderingen van alle Leden gehouden worden, maandelijks, of zoo dikwerf als zulks nader door de Leden zal worden bepaald.

13.—Uit het midden van het Genootschap zal jaarlijks of ter eerste Vergadering in Januarij verkozen worden.

Een President,

Een Vice-President,

Twee Secretarissen, van welken een Tresorier zal wezen, en een van beiden ervaren in de Engelsche taal.

Een Committee van examinatie en beoordeeling der inkomende stukken, verhandelingen memorien enz. welk bestaan zal uit den President, Vice-President, de beide Secretarissen en vijf Leden.

Een Committee van vier Leden, welke het opzicht zullen hebben over de Bibliotheek, het Kabinet van Naturalia, Phijsische instrumenten en andere zeldzaamheden in het Muséum van het Genootschap berustende.

14.—Alle Memorien, Verhandelingen, Berigten of andere stukken, die men het Genootschap wil doen toekomen, zullen bij eenen der Secretarissen moeten worden ingezonden.

15.—Het Genootschap zal jaarlijks, of zoo dikwerf als er eene genoegzame hoeveelheid van stukken voor handen is, een Deel van zijne werken uitgeven onder den titel, *Verhandelingen van het Bataviasche Genootschap der Kunsten en Wetenschappen*.

16.—De Bibliotheek, het Kabinet van Naturalia, Phijsische instrumenten, Rariteiten en verder alles wat zich in het Museum van het Genootschap bevindt, blijft onder het oppertoezicht van eene Commissie. Elk Lid en ieder vreemdeling, van een Lid verzeld, hebben daar toe op twee nader te bepalen dagen in de week den vrijen toegang.

---

Naderde zoo het Bataviaasch Genootschap door deze herschepping meer zijnen oorspronkelijken aanleg, het was ook een van derzelver eerste en gunstigste gevolgen, dat de Heer Luitenant Gouverneur zelf tot President van het Genootschap verzocht en verkoren, te midden van zoo veel gewigtige ambtsbezigheden, de krus zich liet welgevallen en dezen post aanvaardde.

Onder deze opfluisterende en veel belovende omstandigheden, was het, dat de Leden, door hunnen nieuwen President aangemoedigd, zich nu bij een algemeen Adres eerbiedig verstoutten om het Protectoraat van dit Genootschap aan Zijne Excellentie den Graaf Minto met vurige belangstelling nederig aan te bieden. Ook hier in slaagden zij naar wensch; Zijn Lordschap gaf zijner goedwillige gevoelens voor Java's ingezetenen op nieuw toe, nam de vrijmoedige bede in allen deele gunstig op, en aanvaardde den titel van Protector van het Bataviasche Genootschap.

Tali auxilio & tanto Defensore mag het Genootschap een glansrijker tijdvak te gemoet staren; maar dan ook zullen lust en ijver en werkdadigheid herleven: een naauwlijks overzienbaar veld van veelsoortige nasporing en bewerking biedt zich van alle kanten den kundigen opmerker en beoefenaar aan of dringt zich liever zijner waarnemingen en naarstigheid van zelfs op; hoe veel gronds ligt nog onaangeroerd of naauwlijks ontgonnen, of gebrekkig bearbeid! wat blijft er niet over voor allerlei wenschen en billijke verwachtingen! te bijzonderen is niet noodig, daar zoo veel ontbreekt.



NEW  
REGULATIONS  
FOR THE  
BATAVIAN SOCIETY,  
OF  
ARTS AND SCIENCES,

*“For the Public benefit.”*

---

1.—THE Batavian Society of Arts and Sciences, established on the 24th April, 1778, with the motto *“For the Public benefit,”* shall continue under the special patronage of the British Government.

2.—The public benefit is the general aim of the Society, and the purpose of its labours. The extension and improvement of natural history, and of the knowledge of the languages, antiquities, manners, and customs of the Natives of India, and other particularities of the Eastern countries, are pointed out by its local situation, as the more immediate field of its enquiries, which will also embrace the improvement of agriculture, and other matters connected with the prosperity of the colony.

3.—Acknowledged integrity, and an anxious desire to contribute towards the diffusion of the Arts and Sciences, will be sufficient recommendations for individuals proposed as Members of the Society.

4.—No persons will be received as Members of the Society, unless they have previously stated their wish to become so.

5.—Persons proposed by the President or by one of the Members, will be elected at the ensuing Meeting, with a majority of two-thirds of the Members present.

6.—The annual contribution is 20 Rupees, payable before the 31st January in each year, and each Member on his election is likewise bound to pay a similar sum, or as much more as he may deem proper.

7.—Refusal to comply with the above article, will be considered as a resignation.

8.—The Funds of the Institution will be appropriated to its incidental expences, and to the purchase of Books, Philosophical Instruments, and other useful articles, a due regard being had in these expences to the most rigid economy.

9.—All lovers of the Arts and Sciences, who may present the Society with any productions of their genius, will receive the thanks of the President and Members in acknowledgement.

10.—The Society will gratefully accept all presents of books, manuscripts, curiosities, and interesting objects for their collection of Naturalia.

11.—The Society is willing to correspond with other Institutions of a similar nature, and with Individuals.

12.—In order to forward the useful purposes of the Society, general meetings of all the Members will be held monthly, or as often as may be deemed necessary.

13.—The following Officers will be appointed annually, at the first meeting in January.

A President.

A Vice ditto.

Two Secretaries, one to act as Treasurer, and one of whom must possess a competent knowledge of the English language.

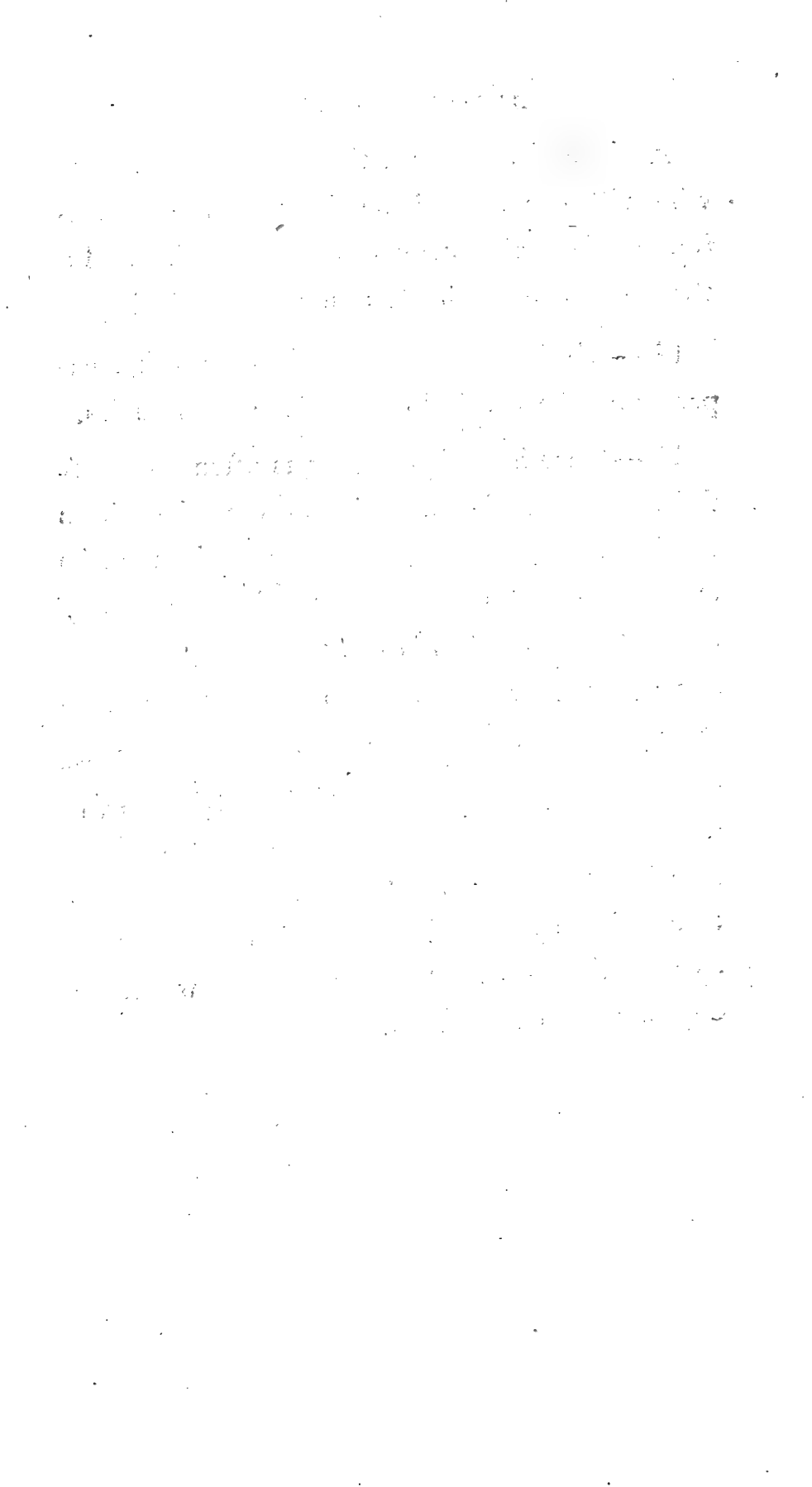
A Committee for examining and reviewing the papers sent in, to consist of the President, Vice President, the two Secretaries and five Members.

A Committee, consisting of four Members, who will superintend the Library, the collection of Natural Curiosities, Philosophical Instruments, &c. in the Museum of the Society.

14.—All Memorials, Treatises, or other papers, must be sent in to one of the Secretaries.

15.—Once in each year, or as often as a sufficient number of communications may have been received, the Society will publish a volume of its labours, under the name of “*Transactions of the Batavian Society of Arts and Sciences.*”

16.—The Library, Collection of Natural Curiosities, Philosophical Instruments, and generally the Museum of the Society, is under the special superintendence of the Committee above-mentioned, and each Member, or stranger accompanied by one of the Members, shall have free admission thereto twice every week, on days hereafter to be fixed.



NAAMLYST  
DER  
TEGENWOORDIGE LEDEN  
VAN HET  
**BATAVIAASCHGENOOTSCHAP.**

---

PROTECTOR,  
Zyne Excellentie GILBERT GRAAF VAN MINTO.

---

PRESIDENT,  
De Heer THOMAS STAMFORD RAFFLES.

---

VICE-PRESIDENT,  
De Heer MR. H. W. MUNTINGHE.

---

SECRETARISSEN,  
De Heeren J. T. Ross, *Prof.*  
J. DUPUY.

---

COMMITTEE OVER DE PAPIEREN,  
De Heeren J. Schill, *Pred.*  
B. F. W. Baron von Lutzow.  
P. van Zaanen.  
J. I. van Sevenhoven.  
Ph. Wedding, *R. Past.*

COMMITTEE OVER HET MUSEUM,  
De Heeren J. A. Kerst

J. M. van Beusechem.

G. Reinking.

---

BIBLIOTHECARIS,  
Ph. Wedding, *R. Past.*

---

LEDEN,

De Heeren J. Siberg.

W. V. H. van Riemsdyk.

W. H. van Ysseldyk.

F. Montanus, *Pred.*

N. Engelhard.

J. Th. Ross, *Prof. Hon.*

J. Schill, *Pred.*

J. Th. Reynst.

W. J. Cranssen.

Mr. C. A. Canter Visscher.

P. A. Goldbach.

Mr. W. A. Senn van Basel.

D. D. Gr. von Ranzow.

P. Th. Chassé.

C. van Naerssen.

B. L. van Zitter.

C. Eeckhout.

F. P. Seena.



De Heeren H. E. Wiltenaer.

G. W. C. van Motman.

Th. Horsfield, *Med. Doct.*

B. F. W. Baron von Lutzow.

R. Coop à Groen.

J. A. Zwekkert.

- - - Gravier.

- - - Capmartin.

- - - Verlaqué.

- - - Froberville.

- - - Pitot.

- - - Vincent.

J. Th. Liesart.

J. B. L. C. T. L'Eschinault de la Toure.

P. van Zaanen.

J. J. Schoonenberg.

J. A. Kerst.

J. Sluiter.

J. I. van Sevenhoven.

Ph. Wedding, *R. Past.*

Mr. H. W. Muntinghe.

C. Mackenzie, *Luit. Col.*

W. Robison, *Maj.*

A. L. P. de Serriere.

J. Ekenholm.

J. Schill, jun.

Th. S. Raffles.

De Heeren H. Hope.

W. Flint, *Kapit.*

W. Robinson.

Th. Macquoid.

J. Lawrence.

Ch. Assey.

D. Ainslie, *Med. Doct.*

Th. Williams, *Luit.*

J. M. van Beusechem.

J. Ch. Boswel.

J. Ch. Goldman.

G. F. Meylan.

J. H. de Hoogh.

G. Reinking.

D. J. van Boeckholtz.

G. O. van der Keer.

P. Veeris.

A. H. Smissaert.

Mr. D. Popkens.

W. Watt.

J. F. Zbaetzcky.

F. E. Hardy.

G. O. Jacob.

Mr. M. J. Pipers.

J. Jongkind.

W. Aston, *Luit.*

A. Hare.

De Heeren J. Crawford.  
 B. W. Westermann.  
 J. Dupuy.  
 M. Nightingall, *Maj. Gen.*  
 J. A. van Braam.  
 G. A. Addison.  
 H. Sargent.

---

HONORAIRE EN CORRESPONDERENDE LEDEN,

De Heeren J. Banks.  
 C. P. Thunberg, *Prof.*  
 W. Marsden.  
 A. Seton.  
 W. Milburn.

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

1911

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

1911

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

1911

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

1911

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

1911

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

1911

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

1911

THE NEW YORK PUBLIC LIBRARY

ASTOR LENOX TILDEN FOUNDATION

500 FIFTH AVENUE, NEW YORK, N. Y.

A  
**DISCOURSE**

*Delivered at a Meeting of the Society of  
Arts and Sciences in Batavia, on the  
Twenty-fourth day of April 1813, being  
the Anniversary of the Institution.*

---

BY THE HONORABLE  
**THOMAS STAMFORD RAFFLES,**  
*PRESIDENT.*

---

GENTLEMEN,

ALTHOUGH I have naturally withheld my signature from the address to my LORD MINTO, which now lies on the table, in consequence of the very pointed manner in which the framer of that address has noticed the protection and encouragement which I have personally afforded to the Society, I shall have much pleasure in forwarding it, and in personally soliciting his Lordship to take the Society under his immediate patronage. — I am satisfied that he will entertain a due sense of the consideration which you have shewn to his exalted talents, and I flatter myself that we may confidently

count on his promoting the views and objects of the Institution to the utmost extent.

Elected as your President by the unanimous voice of the Society, and earnestly solicited by the most conspicuous of your Members to accept that station, I have not felt myself competent to decline so marked a distinction ; but I must assure you that I feel very sensibly my entire inability to execute its important duties, either with benefit to you or with credit to myself. Far more preferable would it have been to me had this honorable post devolved upon one of your more competent Members, and that you had permitted me to have mixed with you as one of your ordinary though not least zealous associates.

On the present occasion however, assembled as we are, in commemoration of the Anniversary of the Institution of the Batavian Society, with such fair prospects before us of promoting the original design of its establishment, under the anticipated protection of so ILLUSTRIOUS A PATRON, I cannot refrain from taking a general, though imperfect review, of the progress of the Society, from its first institution, nor from indulging in the contemplation of the lights which the future exertions of its active and zealous Members, may throw on *man* and *nature* in these remote regions.

In common with other human Institutions the Batavian Society has been subject to many changes and vicissitudes; but it is to the calamitous effects of a war which has desolated the finest countries in Europe, and which extended its baneful influence to this distant Isle, that we are principally to attribute its decline. Cut off from all communication with the Mother-country, and distracted by internal jealousies and disputes, Science drooped, and this Society, which at one time maintained so distinguished a character, almost ceased to be known.

The Batavian Society has, I believe, the honor of being the first Institution of a Literary nature established by Europeans in the East.— Previous to its establishment, Mr. *Radermacher*, a gentleman of distinguished talents and a zealous promoter of the Christian Religion, and of Science, with a few friends at Batavia, conceived the idea of assembling together a number of persons of consideration and ability, with the view of encouraging the Arts and Sciences in this Capital and the other Indian Establishments then dependant on Holland. They considered that in India as in Europe, where for two centuries the reformation in letters preceded that in religion, a taste for the Arts and Sciences must

be introduced previously to the general adoption of the Christian Religion in the East; but they were aware of the difficulties to be encountered under the circumstances in which the Colonies of Holland were then placed, and a considerable period elapsed before the design was carried into effect.

At length, in the year 1777, when Mr. *Radermacher* and his father-in-law, the Governor General *De Klerk*, were newly elected Directors of the Society of Haerlem, a Programma appeared, which contained the plan of extending the branches of that Society to the Indies. The distance and extent of the Dutch Colonial possessions in the East, did not however admit of this plan being realized, but the idea being thus brought forward to public notice, a separate Society was, by the unremitting perseverance of Mr. *Radermacher*, who may be called the founder of the Institution, established at Batavia.

On the 24th of April, 1778, this Society was duly established under the authority of Government, and after the example of Haerlem, took for its motto, *The Public Utility*. On its first organization the Society consisted of 192 Members, the Governor General being Chief Direc-



tor, and the Members of the High Regency Directors. The ordinary Members were elected from among the most distinguished inhabitants of Batavia, and the possessions of the Company; and it was enacted, that as many as were present should annually hold a general assembly, in order to judge and decide upon the answers received to the different questions proposed, to propose new questions, and to make general regulations. In addition to this general direction, a Committee was nominated, consisting of eight Members, with a President and Secretary, who were charged with the daily occurrences, and with authority to decide upon and carry into effect whatever might not admit of delay, reporting their proceedings at the ensuing general assembly.

The Society selected as objects of research and enquiry, whatever could be useful to agriculture, commerce, and the welfare of the Colony; it encouraged every question relating to natural history, antiquities, and the manners and usages of the Native inhabitants, but expressly avoided entering upon any subject which might relate to the East India Company; and in order the better to define the objects and contribute to their accomplishment, a Programma was from time to time printed and circulated abroad.

These Programmas contain many important questions, as well general as particular, relating to agriculture, commerce, the means of removing the insalubrity of Batavia, the diseases of the climate generally, and other points which clearly mark the objects of the Society. Among these, the following question may deserve notice :—

*“ By what means of finesse do the Preachers  
 “ and Missionaries of the Moslem faith succeed,  
 “ even at the present day, in converting Pagans  
 “ to the faith of the Koran, and in establishing  
 “ them in this faith.”*

Although it would seem that this question might either have been answered generally by stating *“ that the Mahomedans at the present  
 “ day owe their success principally to their  
 “ more intimate assimilation with those to be  
 “ converted.”* Or perhaps eventually by *“ a  
 “ philosophical and political view of the first  
 “ establishment of the Mahomedan Religion  
 “ on the Islands and Coasts of the Seas lying  
 “ East of the Straits of Malacca and Sunda.”* It does not appear to have been replied to in any of the subsequent volumes.

The view which I have just mentioned seems to fall peculiarly within the province of the So-

ciety, and to be highly deserving its attention ; it is a part of history, which seems hitherto to have been too little investigated, and a tract on the subject, while it discussed the question alluded to, would naturally introduce other important objects.

The Society was no sooner fully established and its proceedings generally known, than it received from all quarters various acquisitions to its cabinet and library. Mr. *Radermacher* himself presented the Society with a convenient house and with eight cases of valuable books, a collection of animals, fossils, minerals, musical instruments of the Javanese, and of the different coins current in the East ; and in the same year, by the liberality of Mr. *Bartto*, the Society was enabled to form a Botanical Establishment in a garden presented by that Gentleman.

In 1779 the Society undertook to print the first volume of its Transactions ; the second appeared in 1780, and the third in 1781, but from the want of types and other unfortunate circumstances, a *Programma* only appeared in 1782. In 1786 the 4th volume was however given to the public, but printed in Holland by the Commissaries of the Society, under the special privilege of the States General.

After this period the Society observing that the questions proposed remained unanswered, set to work themselves and published the 5th volume in 1790. In this and the 6th volume, which appeared in 1792, the Essays are written exclusively by the Members.

In 1794 the two first Essays intended for the 7th volume were printed; but no subsequent publication of the transactions of the Society appears to have taken place.

Subsequent to this period, when the revolutions in Europe, the war and other circumstances of the times, continued to interfere with the prosperity of the Society, it was suggested by some of the Members, that by adopting a more limited plan for its proceedings, the objects which the Society had in view might still be obtained; and accordingly a resolution appears to have been taken to this effect, to which the approval of the High Regency was obtained in May 1800.

Under this new organization of the Society, the "Public Utility" was still the declared object of the Institution; but the publication of questions, except at the particular suggestion of any Member was discontinued. The Society still continued to consist of men of ability and

talent. The direction of the Society was placed in the hands of a Directory of nine persons including the Secretary, who were chosen from among the Members, each taking precedence in his turn for one month. Corresponding Members were elected at the principal settlements and out-stations, and the general annual assemblies were abolished. In the hands of this Directory the Society appears to have deposited every thing; and considering the distracted state of the country, such a conduct may perhaps have been essential for maintaining its existence during the convulsed period which ensued.

Notwithstanding the exertions of the Directory to complete the seventh volume, it was found impracticable, and the only acquisitions which it appears to have obtained during the period in which the affairs of the Society were exclusively under its management, are the communications of Dr. *Thomas Horsfield*. This Gentleman was proposed to the High Regency, and authorized to prosecute his Botanical Researches under the sanction of Government. After several excursions in different parts of the Island, he established himself at Souracarta with the view of forming a *Flora Javana*, forwarding to the Society from time to time reports of his pro-

gress, dried plants and useful descriptions and accounts of discoveries made by him in Natural History.

Such was the state of the Society at the change of Government in 1811, when the dark perspective was illumined, and the talents and ambition of the Society again shone forth from the obscurity in which political circumstances had involved it.

Without noticing particularly the various Essays which adorn the pages of the six volumes of the transactions already published, I shall briefly observe that as far as my limited knowledge of the language enables me to judge, they contain much useful and interesting information, particularly on economical subjects materially connected with the interests of Science and Literature.

In the first volume will be found an interesting description of the Dutch possessions in the East Indies, and the transactions are replete with various valuable tracts on agriculture, commerce, political economy, and natural history, by Messrs. *Radermacher, Van Hogendorp, Hooyman, Van Iperen, Baron Van Wurmb, Couperus, Van der Steege, Titsing, Tessiere, Van Boeckholtz*, and others.

Having thus taken a retrospective view of the Society, from its first institution until the period when it was new modelled under the regulations of last year, I shall proceed briefly to notice the contents of the volume, which is now sent to the Press, and to communicate such suggestions as occur to me with regard to our future proceedings.

In various branches of Natural History, Doctor *Horsfield* is eminently conspicuous, and the papers which will now come before the public from his pen, are highly interesting to Science. On the Antiquities and Native History of the Island, some light is thrown by Lieutenant Colonel *Mackenzie*, Surveyor General on the Madras Establishment, in his interesting Tract on the Ruins of Prambana, forming the Capital of one of the early dynasties of this Island; and on the Island of Borneo, some interesting data are furnished on which to found our further enquiries in that immense Island, from the pen of the late Dr. *Leyden*. The circumstances under which this paper was written are stated in a note annexed to the paper itself.

Had our late valuable Secretary, Dr. *Hunter*, been spared but a few months, the present volume would not have made its appearance without

containing some highly interesting Essay from him. His death is deeply deplored by us all, as must for ever be the unexpected and untimely fate of my departed friend Dr. *Leyden*, who, although not actually initiated as a Member of this Society, came from the other India panting after knowledge and busy in the pursuit of Science. Had Providence ordained that he should have remained a few months on this Island in the exercise of the wonderful powers of his ever active mind, I am convinced, that from his extraordinary acquirements in all the languages of the East, his deep erudition, and his zeal in the cause, he would have found it no difficult task to have traced the connection which formerly subsisted between the Eastern Islands, and Western India, from a comparison of their languages and dialects only. His views were the most extended and comprehensive that a philosophic mind can conceive. Ardent in the pursuit of knowledge in every direction, and rising with difficulties, his uncommon mind and rare talents must naturally have overcome every obstacle.

A more convincing proof cannot perhaps be offered of the views which he contemplated, in setting his foot in this capital of the Eastern Islands, than in the sketch of Borneo, which



I have just noticed. This was prepared by him on his passage from Malacca to Batavia during the progress of the Expedition. It stands uncorrected by his masterly hand, but even in its present state, will, I have no doubt, be found to merit a place in your publications.

Irreparable as the loss of these inestimable promoters of our design and ornaments of our age must be, and deep as our regret may be felt, we are not to despair of what may hereafter be done; but rather, from the loss we have sustained, put our shoulders more firmly to the wheel, and exert ourselves more than under other more fortunate circumstances, would have been necessary.

The first point which it appears to me essential to notice with regard to our future proceedings, is the necessity of encouraging and attaining a more general knowledge of the Javanese language. Hitherto the communication with inhabitants of the country has been chiefly through illiterate Interpreters, or when direct, through the medium of a barbarous dialect of Malays, confounded and confused by the introduction of Portuguese and Dutch. Without a thorough knowledge of this language, it is impossible to form any accurate idea of the modes

of thinking or acting among the people of this country. Much valuable information may be expected to be found in their books, and when they are more generally known, an attempt may be made to develop the early history of the Island, which, with the exception of some leading facts, remains anterior to the introduction of Mahomedanism, involved in obscurity and fable.

I have already in my possession three detailed histories of the Island, stated to be taken from their own written accounts; but as they have passed through one, and in some cases two intermediate languages, and the persons intrusted with the first translation not perhaps understanding the subject, I cannot depend upon them.

Vocabularies have already been collected of the different dialects of the Javanese, and also of the principal languages in the Eastern seas, and from the unremitting and indefatigable exertions of Colonel *Mackenzie*, whose researches into the history and antiquities of Western India, so eminently qualify him for similar pursuits in this quarter, we are justified in the expectation that many of the doubtful points regarding the early connection of Java and the Eastern Islands with the Continent of India will be cleared up.

The collections of Colonel *Mackenzie*, who has personally visited almost every part of the Island, prove the zeal with which he has taken up the subject; and on his return to India, where an opportunity may be afforded of decyphering several inscriptions found in different parts of Java, of which he has taken *fac similies*, we are promised that his exertions will not be relaxed in endeavoring to illustrate whatever may be important.

The opportunity afforded of increasing our stock of Javanese Manuscripts has not been lost, and if the Government should be enabled to prosecute a plan which is in contemplation for forming an establishment for the acquisition of the language, we may hope that translations of the most important will soon find a place on the shelves of our library.

Dr. *Horsfield* still continues his pursuits in Natural History, with unabated zeal; and although he has been for a time removed from the immediate field of Java, he is prosecuting in a neighbouring Island, pursuits of a similar nature. The Island of Banca, which has lately fallen into the possession of our Government, had never been explored by Europeans. Dr. *Horsfield* has undertaken the task, and from his ta-

lents, ability, and industry, the most sanguine expectations may be realized.

Mr. *Muntinghe* also, whose enlarged views and extraordinary endowments so peculiarly qualify him to direct you in the paths of Science and Literature, will not be wanting in contributing his share to the general purposes of the Society. He has already collected many highly interesting tracts on the Native Laws and Institutions as they are traced to have existed antecedent to the introduction of the Mahomedan faith; and when his information is more mature and his collections more complete, we are justified in the expectation, that he will devote to the Society some portion of that extensive stock of literary acquirement and sound judgment for which he stands so eminently conspicuous.

To the learned Professor *Ross*, the Society is already highly indebted, and while we cannot but consider our thanks as peculiarly due to this Gentleman for his exertions in preserving the existence of the Society during a period of peculiar delicacy and difficulty, I am satisfied that we may look to him and the other Dutch Members for the most essential aid in future. To particularize in many of these Members would perhaps be invidious to the whole, but if I may be

allowed to introduce the names of *Engelhard*, *Couperus* and *Van Naersen*, and to calculate on the advantages which must be derived from the investigations and communications of these Gentlemen, I am sure there are few among us who will not readily admit their claim to pre-eminence and distinction.

Without entering on the various subjects which offer themselves for enquiry on Java, and which, not to intrude on your time at present, may be more advantageously introduced in a list of *Desiderata*, I shall confine myself to a few observations on the present state of the Countries in its vicinity which seem most to demand attention.

The Members of the Society must have been forcibly struck with the rapid progress made by the *Asiatic Society* in Calcutta; an Institution of recent date, compared with that established at Batavia; and however much the decline of the latter may be attributed to the political circumstances already stated, I am inclined to think, that its decay may in some degree have been accelerated by the nature of its constitution. A very essential change has lately been effected, and the Regulations of the *Batavian*

*Society* have been new modelled, nearly on the same principle as those of the Asiatic Society in Bengal. Although, therefore, we may not at the present moment boast of so many eminent Literary Characters as are to be found among the Members of that Society, it is but fair to flatter ourselves with the expectation, that under the fortunate change of circumstances which has taken place, with regard to this Island, and the new organization of the Society, our exertions may tend considerably to a better knowledge of this part of the World, and the general advancement of Literature and Science.

The objects of the Asiatic Society in Calcutta, are so fully explained in the discourses of Sir *William Jones*, that it is unnecessary to enter into any explanation of them here. The researches of that Society are not confined immediately to Western India; they extend throughout the whole regions of Asia. The whole circle of the Sciences and the wide field of Asia, are alike open to your observation, but it occurs to me, that the interests and object of the Institution will be more advantageously promoted by its exertions being directed to what falls more immediately within your reach.

It is to what has been emphatically termed the “ FURTHER EAST” that I would direct your more immediate attention; and here, if I am not mistaken, an ample field is afforded. The History of Sumatra, by Mr. *Marsden*, has thrown so clear a light on the country and character of the inhabitants, that I have but to refer you to that valuable work for all that is yet known respecting that interesting Island. Much, however, still remains to be done, even in this quarter, and our recent connection with Palembang, and the Southern Provinces of the Island, promises to afford every facility to our enquiries. Of Banca, we shall no doubt possess the most accurate and interesting information, on the return of Dr. *Horsfield*, and as our recent establishment in that quarter forms a new centre from which our enquiries may diverge, the various countries in its vicinity will no doubt be early explored.

Of the chain of Islands lying East of Java, and with it denominated generally the Sunda Islands, I shall only notice particularly that of Bali. This Island lies so close to Java, that it is surprising so little is known of it. All accounts agree, that vestiges of the Hindu or B'hudist religion, perhaps of both, are still to be found. Some accounts go so far as to state, that

in the interior of the country, the inhabitants are divided into four tribes, termed *Bramana*, *Sudra*, *Wazier*, and *Sutra*; and it is certain, that on the final establishment of the Mahomedan religion in Java, the Hindus or B'hudists who remained unconverted, took refuge in that Island. I will not venture further on this unknown ground, feeling satisfied that another year will not be allowed to pass by without personal observation on the spot by some inquisitive enquirer.

We have hitherto only adverted to the countries lying in the more immediate vicinity of Java, but in extending the prospect and directing our views Eastward to the other Islands of the Archipelago, our attention is forcibly attracted by the great Island of Borneo, hitherto a blank on the chart of the world. From the best information we have yet been able to obtain of this immense Island, greater in extent than any civilized nation of Europe, and abundantly rich in the most valuable natural productions, it would appear that the whole country was, at no very remote period, divided under the three Empires of Borneo, Sucadana, and Banjer Masin, of which the reigning Princes of the two latter, trace their descent from *Mah'japahit* in Java.



Borneo or B'ni, now termed by us Borneo Proper, having been the first port visited by Europeans, may have given rise to the name of Borneo being erroneously applied to the whole Island, which by the native inhabitants, and universally by the Eastern States, is termed Pulu K'lemantan. Its Princes deduce their origin from the Sultans of Johor, but such is the wretched state to which their country has fallen, that they possess little more than nominal authority, except on the immediate spot of their residence.

Sucadana, though the most conspicuous in latter times, is now reduced to little more than a name. To the rise of Sambas, Pontiana, and other petty states on its numerous rivers, originating in grants and usurpations of various portions of the Empire, the destruction of the seat of Government by the Dutch, and the general imbecility and want of enterprize on the part of the reigning Princes, may be attributed the state into which the present possessor of the title has latterly fallen. He resides entirely at Matan, an inconsiderable place far up an adjacent river. This Prince still possesses the large diamond which has been for eight generations in his family, but retains little other valuable appendage or consideration to support either his rank or authority.

Banjer Masin, although not much indebted to the interference of the Dutch in promoting its internal improvement, still owes much of its remaining respectability as a State to the protection afforded by the presence of the European authority. Deprived, however, latterly of that support, convulsed by the consequences of the measures which closed the period of Dutch influence, and exposed to the inroads of piratical enterprize, it was rapidly falling into decay, and in a short period its Princes would perhaps have had little more to boast than those of Sucadana, had not the fostering care of the European power been again extended by the encouragement given to the wishes and expectations of the reigning Prince, whose conduct affords, amongst many others, a convincing proof how much the interests, welfare, and even existence of the Native States depend on the ability and character of the reigning Prince.\*

A more intimate acquaintance with Banjer Masin than with the other parts of the Island, enables us to speak more decidedly with regard to the progress of civilization in the interior of

---

\* The Factory of Banjer Masin was withdrawn, and the connection abandoned by the Dutch, early in 1809, the Sultan purchasing for the sum of 50,000 Rix Dollars the Forts and Buildings, on his being declared independent.

the country, and the general state of the Southern Provinces. Something has already been written on the Northern part, and the settlements formerly maintained by the English, have thrown some light on the character of the country and habits of the population in that quarter; the interference which has been found requisite, for the immediate suppression of piracy in the States formerly appertaining to Sucedana, will also afford the means by which much interesting information will be obtained from thence.

Banjer Masin, in common with Java, still retains some vestiges of Hindu antiquity, and among others it may not be uninteresting to notice the circumstance of the Sultan being in possession of a Golden Tortoise with several rings, on which are engraved the figures of *Ishwara* and other Hindu Deities, and impressions of the Cow and Elephant.\*

Of the population of the Island, all that we are yet justified in saying is that the Moslems appear to have established themselves in authority over the aborigines, who are generally termed

---

\* The manner in which the Golden Tortoise was discovered is thus related—"In the reign of the former Sultan, a native of Banjer Masin, when at Sea in company with a *Kling* or native of the Coast of Coromandel, ascertained from conversation that the latter, who

*Orang Dayak*, in those parts of the country adjacent to settlements which they have formed on the banks of the many Rivers with which the Island is watered. These extend some distance inland, but the Mahomedan influence has not spread far into the interior. Indeed, the mass of the population which may have submitted to the Moslem Chiefs, still remain unconverted to

---

“ was a Hindu, had a secret object in proceeding to Banjer Masin, “ and at length discovered that object to be the recovery of property “ belonging to his ancestors, which appeared to lie buried in the “ earth at a place called Mirampiañ. Stimulated by the expectation “ of gain, he dissuaded the Hindu from immediately prosecuting his “ object, and bent his own course directly to the spot, where, after “ digging to a considerable depth he discovered several compartments “ inclosed by walls, in one of which he found the Tortoise with a “ pot of gold-dust on the back.” Intelligence being immediately carried to the Sultan, his further researches were prevented, in consequence of the spot being seized as a droit of royalty, after which no further investigation appears to have taken place. The Cow is said to be never seen among the emblems of Hindu or Vedantic Mythology; but the Ox frequently. The Elephant is introduced merely as an ornament, except when repeated in certain stories with other figures of the Drama. The Elephant exhibited on the Seal Ring may have some allusion to the *Calinga* or *Telinga* state, the chief of which was denominated the *Gaja Putty* or *Lord of Elephants*. In like manner as the Chief or King of the *Carnatic* was denominated *Nara Putty* or *Lord of Men*, but the Seal of *Carnatic* was a *Wild Hog*.— Pillars and remains of buildings, evidently traces of a more enlightened population at a remote period, have been noticed a considerable way up the river; but until that part of the country is visited by Europeans, it would be premature to offer any observation on their origin and design.

the Mahomedan faith, and in the interior their habits are so barbarous as to prevent all intercourse, even with the Mahomedans most in their vicinity. Those subjected to the Mahomedans appear to be mostly tractable and of mild disposition, but so wretchedly sunk in barbarous stupidity as to submit to every indignity without resistance, while those who still retain their independence, and who are to be considered as the bulk of the original population, form innumerable ferocious tribes, constantly at variance with each other, and individually rejecting internal Government and controul.

It may be a question whether the present state of society among the unsubdued inhabitants is to be attributed to any marked distinction between them and those who have submitted to the Mahomedan rule, or whether the barbarity which now disgraces human nature, may not be traced in a great measure to the conduct observed to those who have submitted to a foreign influence. Be this as it may, it is a lamentable fact not to be disputed, that at the present day, almost within sight of Java, the sacrifice of human beings at ceremonies and festivals is so common that enterprizes are undertaken divested

of every other object but the attainment of human beings for such occasions.

Where such practices are prevalent, it is not to be expected that a country can boast extensive population; indeed, under such circumstances it may rather be matter of surprize that Borneo should be so populous as it is. Happily there is no state of human nature so debased as not to afford a field for improvement, and although the horrid custom alluded to would seem to check any sanguine hope of a rapid change being effected, there are some traits to be found, even in these savages, which afford an opening for intercourse and consequent improvement. They are not without industry, and when met by candour and kind treatment are rather disposed than otherwise to a trading intercourse. From mild and judicious management much may be expected.

From what has been said of the present state of Borneo, it follows that we are not to calculate on any immediate addition to our stock of useful arts, but as every untrodden path affords some new incitement to the inquisitive mind, we may look for much in the various branches of Natural History;—to the philosophic mind a wide and interesting field is opened, and while

we contemplate in a political point of view the advantages which must result from bringing forth and directing in a proper course the latent energies and resources of so large a portion of the habitable globe, it must be a pleasing reflection to the Philanthropist that so many of our fellow creatures are thus gradually retrieved from ignorance, barbarism and self destruction.

Much valuable and interesting information has already been collected by Mr. *Alexander Hare*, the present Resident, a gentleman whose desire after useful knowledge and whose zealous exertions in the cause he has undertaken, are perhaps unrivalled, and from the progress which he has already made in developing the general nature of the country and character of its inhabitants, the happiest results may be contemplated. He has already made several incursions, and projects at an early period penetrating far into the interior of the country. Under his enlightened administration the country subjected to Banjer Masin has been already reduced to order and regulation, and it is reasonable to expect that the shores of all Borneo may in time be approached without danger, and the population of the interior open to safe and general communication.

Proceeding east, our progress is arrested by the Celebes, an Island as remarkable for its peculiar shape, as for the martial and commercial enterprize of a great portion of its inhabitants. Of this Island, however, we yet know but little that is to be depended upon, except of the south west limb, and the immediate neighbourhood of the north east point.

Among the records of the Dutch Government a very interesting map of the south-western limb, has been found ; and from the minuteness and ability with which it appears to be executed, it promises to throw much light on the general nature of the country ; and will at all events facilitate a more accurate survey whenever circumstances may admit of such an undertaking.

The most prominent nations in this part of Celebes are the Bugis and Macasar or *Mengasar*, but hitherto we have only discovered one written character, distinct from every other in the Eastern Islands. The Mahomedan religion prevails generally throughout this part of the Island, but in the northern provinces, beyond *Mandhar*, and generally in every interior part of the Island, human nature appears nearly in the same rude state as we have described it in the interior of Borneo.



The people are, however, known under the general denomination of *Alfur* or *Arafura*, which term is extended to the same description of inhabitants in the Islands further East ; these last do not appear to differ essentially from the *Orang Dayak* of Borneo, and may with them be considered as the Aborigines of these Islands. The Celebes, from its peculiar figure, seems admirably adapted for the purposes of commercial intercourse ; and although but a very small portion seems yet to have advanced to any degree of civilization, they are renowned among other eastern nations for the spirit of commerce and war. They have established various colonies on the opposite coast of Borneo, and on the shores of the adjacent Islands, and even maintain an influence of no inconsiderable weight in the politics of the Malayan States west as far as the straits of Malacca. The Bugis and Macasar nations, like the Javanese, are nations perfectly distinct from the Malays ; but we are not yet sufficiently acquainted with the Native History to assert how far they are entitled to be considered as the indigenous inhabitants of the country.

We know pretty accurately the date of the introduction of the Mahomedan faith, and some

leading circumstances relating to the conversion of the people; but from the advanced state of their civilization compared with that of the *Arafuras*, it must be inferred, that at the period of its introduction, they had attained a considerable degree of improvement beyond the bulk of the population; and indeed, we are borne out by tradition and history in the belief that in this part of the Island there existed a powerful Nation, long antecedent to the introduction of Mahomedanism. We are not, however, prepared to say from what foreign quarter this portion of the Native population was first civilized, and we are not yet informed, whether, as in Java, any traces are to be found of Hinduism. On these points, and in short on every essential point, we have much to learn; and the field is so important and interesting, that I flatter myself the period is not far distant, when the pages of our transactions may throw much light on the subject. We have already, as I before noticed, obtained through the assistance of Captain *Phillips*, the Resident, very extensive vocabularies of the language, and the enquiries which have been set on foot by that Gentleman at the suggestion of the Society, promise the most interesting result.

Further East lies the Island of *Gilolo* or *Halamahira*, which is situated between the Moluccas and the Papua Islands, as Celebes itself is situated between the Moluccas and Borneo. *Gilolo* has sometimes, from its form, been denominated little Celebes. With the Western Coast of this Island, we are less acquainted, but the inhabitants of the Eastern Coasts, especially those of *Asa* and *Maba*, are, from their connection on the Moluccas, well known. These, however, would appear to occupy a small portion of the country compared with the *Alfûrs*, that we can hardly be said to be yet fully acquainted with the bulk of the inhabitants.

On this Island therefore, and the groupe of smaller Islands in its neighbourhood, including the Moluccas, the first object appears to be that of ascertaining correctly what is already known; and after reducing the same to such a form as may furnish a basis, or at least determined points, from which to proceed on further enquiry and investigation, to persevere steadily in the attainment of what is deficient. Our information on the natural history of the Moluccas is perhaps more complete than that of any region of the East, and it is not among the least distinguished records of our Society, that we find a Manu-

script copy of an original work of the celebrated *Rumphius*.

I fear I have already detained you too long in thus particularizing the present state of these Islands, considering that however interesting and important they may be, as lying contiguous to the seat of our deliberations, they embrace but a small portion of the extensive tract, which lays open to the Society, even within the range that I am desirous of defining. To enter upon the whole, otherwise than generally, would be foreign to the object of the present discourse, and I am far from being competent to undertake the task; but while I hastily pass over New Guinea and New Holland, with the numerous Islands of the Southern seas, reserving the observations which occur on these for a future occasion, I cannot refrain from noticing the rapid progress of the European settlements in the more Southern parts of New Holland, and anticipating the practicability of obtaining, in concert with men of research in that quarter, early and interesting information on many important points which still remain doubtful.

Much has been said and collected by Mr. *Dalrymple* on the Sulu Islands, and on the large Island of *Mindanawi* or *Majindanaù*, but it must

be confessed, that very little light is yet thrown on the History of Man in those regions—the mine is still unexplored, and from the notice in the writings of the Seignor *Margarette* and others on Luconia and the Philippine Islands, much may still be expected in aid of what has already been suggested.

From the intimate political connection now opening with the Spanish possessions in both hemispheres, the period is, I trust, not far distant, when an intercourse between our Society and similar institutions existing at Manilla, may bring to light much interesting information. Under existing circumstances, it will naturally occur, that no time should be lost in opening correspondence, and in encouraging the most unreserved and cordial communication.

Had I not already trespassed too long on your time, I should have been inclined to indulge at some length on the prospect which the projected enterprize to Japan affords in aid of our researches in that quarter. From the distinguished talents of Dr. *Ainslie*, the English Secretary to the Society, who proceeds as Commissioner on the part of the English Government, we have just grounds for anticipating the acquisition of much that is to be learnt from these remote and interesting countries.

I must however now apologize for the very unconnected and diffuse manner in which I have taken the liberty to address you. The occasion required that I should say something, and I have already stated how inadequate I felt myself to say any thing to the purpose. I cannot, however, conclude without offering to you my congratulations on the revival of the institution under its present promising circumstances, nor without noticing the liberal manner in which you have undertaken the publication of a *new Edition of the Sacred Scriptures in the Malayan character*. Allow me to assure you, that I am individually deeply interested in the success of the institution, and that, while it may be in my power from my official situation, or otherwise, to encourage and protect your laudable pursuits and undertakings, you may calculate on the most unreserved and liberal support of Government.

# CORRESPONDENCE



TO  
*HIS EXCELLENCY*

THE  
RIGHT HONORABLE

GILBERT LORD MINTO,

GOVERNOR GENERAL OF INDIA, &c. &c. &c.



MY LORD,

The Members of the Literary Society of Batavia take the liberty to address themselves to your Excellency, for the purpose of communicating a request, which although it may in them appear somewhat presumptuous, they are induced to hope will nevertheless be granted by your Lordship; both on account of the motives which have prompted it, and of the laudable objects which your Lordship's gracious compliance is calculated to promote.

The Members of the Society are convinced that their endeavours have hitherto been too feeble, and the fruits of their labour too trivial, to flatter themselves with having merited any particular attention from your Excellency on

those grounds; but as the nature and object of their institution have been considered worthy of the favourable notice of your Excellency's representative on this Island, so much so, that the head of the Government has deigned to accept the nomination of Member and President of the Society, they are encouraged to hope for the forgiveness of your Lordship, if after so distinguished an addition to their Society, they presume to look forward to a yet higher degree of honor and dignity.

It is, however, not alone the desire of distinction, although that sentiment ever coincides with the principles of a Literary Society, that gives rise to this address; be assured, my Lord, that it is much more a sincere feeling of gratitude and attachment to the person and to the principles of your Excellency, which on this occasion guides the conduct of our Society.

Our minds are deeply impressed with the reflection, that at this moment the liberal arts of Peace, and the philanthropic exertions of Literature and Science, are revived and flourish on the same spot, which but a few months past was the terrific scene of war and destruction.



Although there can be no limit to our sentiments of gratitude to that person from whom those advantages were immediately derived, still we never can forget that it was the wise, prudent, and happy choice of your Excellency, which left so benevolent and so worthy a representative of your Lordship among us.

We consider the mild and paternal administration, the philanthropic and enlightened views of your Excellency's representative on this Island, as an emanation of your Lordship's own principles and sentiments, and whilst we rejoice in the splendor which surrounds us, we cannot refrain from looking up to the source from whence its rays proceed.

It is for these reasons, My Lord, that the Batavian Literary Society considers itself bound in gratitude to your Excellency, for all the acts of kindness and protection, which it has so abundantly experienced from the Honorable the Lieutenant Governor of Java.

Reformed by his genius and perseverance—guided by his talents and example, re-established on its original and extensive foundations, and enriched by the addition of a number of new and valuable Members—the Society

flatters itself that a new life and vigour will soon pervade its whole system, and that although the old trunk still remains, the grafting thereon of some new branches, transplanted from a rich and fertile soil, will shortly tend to produce a greater abundance of fruit and of finer quality than formerly.

It is under these particular circumstances that the Members of the Literary Society of Batavia take the liberty to present this address to your Excellency, and to express their earnest entreaty, that your Excellency may be pleased to take their Society under your immediate care and protection, and at the same time to accept the title of "Patron of the Literary Society of Batavia"—a favor which they solicit your Excellency to enhance, by permitting them to receive from their Agents either in Calcutta or in London, a bust of your Excellency, to be placed in the Meeting Room in their new Society-house now erecting at Ryswick.

Your Lordship's compliance with this their anxious wish will be considered by them as the most brilliant event recorded on the annals of the Batavian Society, and as the most favourable augury of their future literary pursuits;

and although the benefits which your Excellency has conferred on the Island of Java, are too eminent and have made too deep an impression on the minds of its numerous inhabitants ever to be effaced from their memory, the Members of the Literary Society of Batavia nevertheless hope that your Excellency will not refuse them the satisfaction of being enabled to leave to their successors a memorial of your Lordship, which will prove in future years that they were not deficient in those sentiments of grateful acknowledgment and respectful esteem which they owe to the person of your Lordship, and with which they have the honor to remain,

My Lord,

Your Lordship's most obedient, obliged,  
and faithful Servants,

*(Signed by all the Members of the Society.)*

BATAVIA, }  
April 24, 1813. }

# CORRESPONDENTIE.

---

AAN

*ZYNE EXCELLENTIE*

**GILBERT LORD MINTO,**

GOUVERNEUR GENERAAL VAN INDIE, &c. &c. &c.

---

MY LORD,

De Leden van het Letter-kundig Genootschap te Batavia, nemen de vryheid zich tot Uwe Excellentie te wenden en eene begeerte te kennen te geven, die ofschoon zy ook éénigzins vermetel moge schynen, echter, zoo zy hopen, door Uwe Excellentie in gunstige welduiding zal worden opgenomen, uit aanmerking zo wel van de dryfveren waar uit zy geboren wordt, als van de loffelyke oogmerken welke daardoor zouden kunnen bevorderd worden.

Het Genootschap gevoelt dat hare pogingen tot hiertoe te zwak, en de vruchten van haren arbeid te gering geweest zyn, dan dat zy zich zouden durven vleyen, van op grond van de zelve, eenige byzondere opmerking van de zyde van Uwe Excellentie te hebben verdiend; dan daar niet te min de aard en strekking van haar instellingen, de gunstigste oplettendheid van

Uwe Excellenties vertegenwoordiger op dit Eiland is waardig gekeurd, in zoo verre zelfs dat het Hoofd van het Bestier, zich niet heeft onttrokken aan eene benoeming tot Lid en Voorzitter van het Genootschap, zoo vleyen zy zich met de gunstige toegevendheid van Uwe Excellentie, indien zy, na zulk eene vermeerdering van luister te hebben verkregen, hun oog nog op een hooger trap van onderscheiding durven vestigen.

Het is echter niet slechts eergierigheid, ofschoon eene eergierigheid in allen deele bestaandaar is met de beginselen van een Letterkundig Genootschap, maar veelmeer een diep gevoel van dankbaarheid en van verkleefdheid aan de Persoon en aan de grondbeginselen van Uwe Excellentie, welke ter dezer gelegenheid de dryfveren van het Genootschap uitmaken.

Zy kunnen niet zonder aandoening herdenken, dat op dit oogenblik, de bedryven des Vredes en de menschlievende oefeningen van letterkunde en wetenschappen wederom aangekweekt en verlevendigd worden, op die zelfde plek, welke nog slechts weinige Maanden geleden het schrikkelyk toneel vertoonde van Oorlog en Verwoesting.

Ofschoon zy geene palen wenschen te stellen, aan de gevoelens van erkentenis verschuldigd aan die hand, van welke zy deze voorregten onmiddelyk mogen ontvangen, zoo kunnen zy echter nimmer uit het oog verliezen, dat het de wyze voorziening en de goede keus was van Uwe Excellentie, welke deze weldadige hand als een vertegenwoordiger van Uwe Persoon, in hun midden achterliet.

Zy beschouwen het zacht en weldadig bestuur, de menschlievende en verlichte inzichten van Uwe Excellenties vertegenwoordiger op dit Eiland, als een uitvloeisel van Uwe eigene beginselen en denksaard; en terwyl zy zich verheugen in het licht dat zich rondsom hun verspreidt, kunnen zy niet nalaten tevens op te zien naar den oorsprong van waar het tot hun afvloeit.

Het is om deze reden, My Lord, dat het Bataviasche Genootschap zich tot dankbaarheid aan Uwe Excellentie verbonden acht voor alle daden van bescherming welke zy in zulk eene ruime mate van den Heere Luitenant Gouverneur van dit Eiland heeft mogen ontvangen.

Herschept door zynen yver en werkdadigheid; geleid door zyne talenten en voorbeel-

den; hersteld op haren oorspronkelyken en ruimeren grondslag; en verrykt door de toevoeging van een aantal nieuwe en werkzame Leden; vleit zich het Genootschap, dat zich weldra eene nieuwe kracht en leven door haar geheel stelsel zal verspreiden, en dat ofschoon de oude Stam zy blyven staan, de enting op denzelfven van eenige nieuwe takken, gelezen van eenen ryken en vruchtbaren bodem, binnen kort zal dienen om haar vruchten te doen voortbrengen in meerderen overvloed en van eenen keuriger smaak, dan zy te voren pleeg af te werpen.

Het is onder deze byzondere omstandigheden dat de Leden van het Letter-kundig Genootschap te Batavia, zich vermeten deze aan Uwe Excellentie te rigten, en hunnen wensch uit te drukken, dat het Hoogst denzelfven moge behagen, hun Genootschap onder deszelfs byzondere zorg en bescherming op te nemen, en tevens te willen aanvaarden den titel van " Protector van het Letter-kundig Genootschap van Batavia ", Eene gunst welke zy Uwe Excellentie verder verzoeken te willen volmaken, door hun toe te staan, dat zy door hunne Agenten, 't zy in Calcutta of in London, mogen erlangen een Borstbeeld van Uwe Excellenties Persoon, om geplaatst te worden in hunne Ver-

gaderzaal in het nieuw ontworpen Societeits-  
huis by Ryswyk.

De voldoening van deze hunne wenschen zullen zy beschouwen als het luisterrykste tydstip in het bestaan van het Bataviasche Genootschap, en als het gelukkigste teeken voor hunne toekomstige Letterkundige betrachtingen; en ofschoon de weldaden door Uwe Excellentie aan Java bewezen te uitstekend zyn en een veel te diepen indruk op de gemoederen van het Publiek gemaakt hebben, dan dat zy immer uit het geheugen van de Inwoonderen van dit Eiland zouden kunnen worden uitgewischt, zoo vertrouwen zy echter dat Uwe Excellentie hun de genoegdoening niet zal ontzeggen, om een gedenkteeken aan hunne opvolgers te kunnen overlaten 't welk ten bewyze strekt, dat zy niet zyn te kort geschoten in die gevoelens van dankbare erkentenis en eerbiedige achting welke zy aan den Persoon van Uwe Excellentie verschuldigd waren, en met welke zy de eer hebben te verblyven.

My Lord,

Uwe Excellenties zeer onderdanige  
verpligte, en getrouwe Dienaren,

(Getekend door alle de Leden van de Societeit)

BATAVIA,  
den 24ste April 1813. }



## HIS LORDSHIP'S REPLY.

---

To

*The Honorable THOMAS STAMFORD RAFFLES, President of the Literary Society of Batavia.*

SIR,

I have had the honour of receiving your letter of the 25th April, enclosing an Address from the Members of the Literary Society of Batavia, in which they are pleased, in terms much too partial, but on that account highly gratifying to my mind, to offer me the distinguished title of Patron of their learned Institution.

I request you, Sir, as President of the Society, to convey my grateful acknowledgments for this flattering mark of their esteem. It is doubtly acceptable, first, as connecting my name with a body, eminent in Literature and Science, but most as associating me in pursuits beneficial to a country, my relations with which will ever be a subject of gratifying recollection, and whose improvement in knowledge, reputation and welfare, I shall continue to cherish as objects of warm and paternal interest, long after I shall have lost in the

retirement of private life, the power of being instrumental in the cultivation of those blessings.

The Society has enhanced their first favour by desiring that my bust may be placed amongst them, an honour to which I am the more sensible as it seems to bear with it a token of personal regard.—I shall with great pleasure take the proper steps after my arrival in England, for giving effect to this flattering wish.

I beg leave to acknowledge the receipt of the printed transactions of the Society, which will hold an interesting place in my library, and serve to perpetuate in my family the recollection of my connexion with Java, and with those who adorn it with their liberal and ingenuous labours.

Permit me to add the satisfaction with which I see myself joined, Sir, in the esteem of the Society, with your name, and to affix by this letter the signature of an absent brother, to the warm but just testimony borne by the Society, to the ardour, with which, in the midst of many other public cares, you have taken a

conspicuous lead in promoting the universally interesting and useful pursuit of knowledge.

I have the honour to be,

Sir,

Your obedient and faithful humble Servant,  
MINTO.

---

Aan

*Den Hoog-Edelen Heere THOMAS STAM-  
FORD BAFFLES, President van het Letter-  
kundig Genootschap te* **BATAVIA,**

**HOOGEDELE HEER,**

Ik heb de eer gehad te ontvangen UE: brief van den 25ste April, insluitende een Adres van de Leden van het Letter-kundig Genootschap van Batavia, waar in het hun behaagd heeft om my in veel te partydige, maar om die reden voor my des te behaaglyker bewoordingen, den gedistingueerden Titel van Protector van hun geleerd Genootschap aantebidden.

Ik verzoek, UE: Myn Heer, als President van die Societeit, om mynen erkentelyken dank te betuigen voor dit vleyend bewys hunner achting.

Hetzelve is dubbeld aannemelyk, ten eerste door mynen naam te verenigen met een Genootschap, beroemd in Letter-kunde en We-

tenschappen, en voornamentlyk door my een deelgenoot te maken in onderzoekingen ten doel hebbende het geluk van een Land, myne betrekkingen met welk immer een onderwerp van de genoegelykste herdenking voor my zullen zyn, en welks vorderingen in Wetenschap, Aanzien, en Welvaart, ik by voortdoring zal waarderen als voorwerpen van een warm en vaderlyk belang, zelfs noch lang nadat ik in de eenzaamheid van een onbeambt leven de magt zal verloren hebben om een blykbaar deel te nemen in het bevorderen van deze zegeningen.

De Societeit heeft de waarde van haar eerste gunst vermeerderd door het verzoek dat myn Borstbeeld by hen geplaatst mag worden, eene eer, waaraan ik des te meer gevoelig ben, door dien dezelve een blyk van personeele achting schynt te wezen. Ik zal met groot genoegen de behoorlyke middelen in het werk stellen na myne aankomst in Engeland, om dezen vleyenden wensch ten uitvoer te doen brengen.

Ik heb het genoegen den ontvangst te melden van de gedrukte Verhandelingen der Societeit, welke eene belangryke plaats in myne Bibliotheek zullen houden, en strekken om in myne familie de herinnering van myne

betrekking met Java en met die genen die het met hunne edelmoedigen en opregten arbeid versieren, te vereeuwigen.

Het zy my vergund om hierby bekend te stellen de voldoening waarmede ik my zelven, Myn Heer, in de achting der Societeit met uwen naam vereenigd zie, en door dezen brief de handteekening van een afwezigen broeder te stellen onder het warm maar opregt getuigenis welk door de Societeit gegeven wordt, van den yver, waarmede UE: in het midden van vele andere publieke zorgen, een blykbaar deel hebt genomen, in het bevorderen van de algemeen belangryke en nuttige nasporing van Wetenschap.

Ik heb de eer te zyn

Hoogedele Heer !

UE: gehoorzame en getrouwe onderdanige

Dienaar,

(geteekend) *MINTO.*

THE  
JOURNAL OF THE  
ROYAL ANTHROPOLOGICAL INSTITUTE  
OF GREAT BRITAIN AND IRELAND  
VOLUME 31. PART 1. 1901.

CONTENTS.

THE ANTHROPOLOGY OF THE  
FUTURE. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PAST. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PRESENT. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
FUTURE. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PAST. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PRESENT. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
FUTURE. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PAST. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PRESENT. By H. H. S. GUTHRIE.

THE ANTHROPOLOGY OF THE  
FUTURE. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PAST. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PRESENT. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
FUTURE. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PAST. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PRESENT. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
FUTURE. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PAST. By H. H. S. GUTHRIE.  
THE ANTHROPOLOGY OF THE  
PRESENT. By H. H. S. GUTHRIE.

VERHANDELINGEN  
VAN HET  
BATAVIASCHÉ GENOOTSCHAP.

---

I.

*ANTWOORD op de Vraag, voorgesteld door het Genootschap der Kunsten en Wetenschappen te Batavia, over het beste voedsel om nieuw geboren Kinderen zonder Borst of Moedermelk op te voeden, onder de zinspreuk. Ego fateor, me ex eorum numero esse conari, qui proficiendo scribunt et scribendo proficiunt, aan den Schrijver van het welke de Eerprijs eener gouden Medaille is toegewezen.*

---

DOOR CORNELIS TERNE,

MED. DOCT. ARTIS OBSTETRICIÆ LECTOR, LID VAN  
VERSCHILLENDE GELEERDE MAATSCHAPPIJEN,  
EN STADS-VROEDMEESTER TE LEYDEN.

---

I N L E I D I N G.

**Z**ELDZAAM is eene waardige Moeder in die drukkende omstandenen, dat zy niet in staat is, om hare vrucht met hare borst en eigen Moedermelk te drenken.—De wellust, eene korzelheid, het gemak, vermaak, eene traagheid, of eene vergaande liefdeloosheid en onverschilligheid

zijn meest al de ware oorzaken, waarom men zijne tovlugt tot Minnen of andere voedselen neemt om een Kind op te voeden.

Ik zal mij niet over de verplichting uiten, waarom Moeders gehouden zijn hare Kinderen met haren eigen boezem te voeden; waar Natuur spreekt, heeft men door schitterende redenen geene aanprikkeling te geven. Natuur waar zij gij? gij zijt immers in de verzengde lucht-streek niet geheel verschroeit, ontaard en verbasterd; en dus zullen 'er nog altoos brave Moeders in Indië gevonden worden, welke de inspraak der Natuur volgen, met haren eigen boezem trachten hare Kinderen te drenken, en ongeschikte Minnen van haar teeder kroost te verwijderen, of nog liever naar andere voedselen uitzien, dan hare Kinderen bloot te stellen aan die verschrikkelijke en ijsselijke gebreken, waar mede de Indische Minnen besmet zijn.—Voeg hier bij, dat het niet alleen ligchaamlijke ongesteldheden zijn, welke de Kinderen afzuigen, en altoos mede te worstelen hebben, maar zij zuigen ook met de verbasterde Minnen-melk in, den aard en natuur van hare zedelijke gebreken.—Die zonderlinge gemoeds neigingen, welke in de Minnen gevonden worden, uit hoofde van haar geboorte-land, planten zij met de minnen-melk voort: dus ziet



men, dat Kinderen, welke van Malabaarsche of Ceilonsche Minnen gezoogd zijn, valsch van aard zijn; van Javaansche lui en traag; van eene Bouginesche listig, valsch en wreed; en van eene Timoresche min gezoogd zijnde, lui, bijgeloovig, verradelijk en versaagd, en daarenboven alle zeer tot wellust genegen.—Het schijnt mij toe, dat de organische deelen en inzonderheid die der hersenen door de eerste voeding of fijner of grover van zelfstandigheid kunnen worden, zoo dat de werkingen derzelve door middel der zenuwen, voor den geheelen leeftijd, of gevoeliger of aandoenlijker worden, om de werkingen der ziel of nuttiger of onnutiger te doen worden, en dat naar de eerste organisatie veeltijds de vermogens van het ligchaam en de ziel bepaald blijven voor toekomstende tijden.

Van welk een aanbelang is het dus niet, om met de Moeder-melk zijne Kinderen te laten inzuigen, dien aard en natuur, welke men gaarn had, dat zijne Kinderen zouden bezitten, en dat in de Kinderen zoodanig eene goede organisatie plaats grijpe, als wij hun toewenschen om ze tijdelijk en eeuwig gelukkig te maken? wat strijdt derhalve meer tegen de natuur, dan zijne eerst geboren Kinderen aan de zorg en borsten der

slavinnen toe te vertrouwen, ja hunne ligchaams en zielvermogens te vormen aan te bevelen? Het is eene daad en handelwijs, wanneer zij zonder hooge noodzaaklijkheid geschiedt, welke noch in natuur, noch in een moederlijk hart, noch in de staatkunde vallen kan; ja die een Souverein van zijn huis, nimmer zonder kwetsing van zijn geweten mag noch kan gedoogen, en door eene verstandige staatkunde behoorde gebreideld en be-teugeld te worden.—De stichter der natuur heeft den mensch niet alleen geschikt om zijns gelijken voorttebrengen, maar de zorg der opvoeding is hem ook aanbevolen.

De vormder der natuur heeft der Vrouw niet alleen eene baarmoeder gegeven, om een Kind te ontvangen, bewaren en uit te persen, maar ook twee edeler werktuigen om het te voeden na de geboorte; en zich zonder gewigtige redenen daar tegen te verzetten, is de heilige oogmerken der Goddelijke en wijze voorzienigheid te leuf te stellen; en alle de rampen, welke de Kinderen krijgen, door zoo een strafwaardig verzuim, zijn eenig en alleen aan die verdwaasde moeders toe te schrijven; ja hare Kinderen hebben regt om haar te beschuldigen en te beklagen, zoo zij met gebreken worstelen, welke hun door eene

vreemde slavinnen-borst, zijn ingelijfd en ingeënt geworden.

Het zoude mij niet moeilijk zijn, wanneer ik door de velden der Geneeskundigen wilde rennen, om eene reeks van ijselijke gebreken aan te halen, welke vreemde minnen de Kinderen aanzetten, die daar door als martelaars ellendig van de wereld gesloopt zijn en worden: Men kan de daagelijkse bevinding raadplegen, en beroemde schrijvers als *Ballaxer, Camper, Unser, Bikker, van Doeveren, van der Haar*, en eene menigte anderen daar over nazien.

Genoeg voor ons, dat wij bewezen houden, dat de vorming van eene welgestelde ziel en lichaam veeltijds afhangen van het eerste voedsel, dat de Kinderen ingelept hebben, en hier om behoorde nimmer eene vreemde min geduld te worden, als de moeders zelve bekwaam waren, om eene goede borst en voedsel aan haar Kind te geven, en het ontbreekt zeldzaam de Bataviasche Moeders aan den tijd om zelve hare Kinderen te zuigen.

Wij ontkennen evenwel niet, dat 'er soms gebreken zijn, welke het zog verbasteren, ontaarden, of geheel beletten om door de klieven van de borst afgescheiden te worden, en de brave

Moeders buiten staat gesteld zijn, om haar teeder wicht met hare borst te voeden, of dat eene ziek- of zwakkelijke gesteldheid somtijds de beste Moeder de zuiging verplicht te staken, om zich zelve niet meer te ontkrachten, en een slecht zog nog daarenboven aan haar Kind te geven, die dus door kracht gedwongen wordt, naar andere middelen uit te zien, om haar Kind op te voeden.

Laat de oorzaak zijn, welke men wil of verkiest, de Moeders kunnen, of helaas zijn onbarmhartig genoeg, willen hare Kinderen zelve niet zuigen: en om de Kinderen van de treurige gevolgen der slaafsche minnen te bevrijden, verlangt de Edele Konst en Wetenschap lievende Maatschappij te Batavia, een beter en geschikter voedsel om de teedere wichten op te voeden, dat aan zoo eene schielijke ontaarding en bederving niet onderhevig was, en ook zulke wanorders in de Kinderen niet te weegbragt, dan de gewone melk-pappen.

Ik zal op de uitnoodiging der Edele Konstminnende Maatschappij mij verstouten en onderwinden om naar den opgehangen lauwer te dingen en stellig de voorschreven vraag met ja beantwoorden, en aantoonen, dat voor de Kinderen op Batavia &c. een beter en nuttiger voedsel te vinden is, dan de gewone melk-pappen.

Mogten mijne pogingen nuttig zijn in een land, daar ik certijds niet geheel onnut geweest ben! *Si desint vires, tamen est laudanda voluntas.*

---

### EERSTE AFDEELING.

Verwacht niet, Wel Edele en zeer geleerde Heeren! dat ik voor alle Kinderen in Oost-Indië een en het zelfde voedsel zal, kan, mag, of moet voorschrijven.

Het is waar, alle eerstgeboren Kinderen verschillen zoo in temperament als anderzins zeer weinig van elkander; edoch men zal mij nogtans gaarne toestemmen, dat het eene Kind zoo in als uiterlijk van gestel sterker of zwakker is, en dus zou een en het zelfde voedsel, somtijds het eene Kind kunnen voordeelig en het andere nadeelig kunnen zijn, inzonderheid, als men die twee Kinderen van zeer verschillende krachten en sterkte een en het zelfde voedsel in eene gelijke hoeveelheid en menigte wilde toedienen; ja schoon voor beide Kinderen een en hetzelfde voedsel nuttig was, zoo zou het voor het eene Kind schadelijk kunnen worden of zijn, als men het niet in eene minder hoeveelheid gaf, dewijl door zwakte de verterende kragten, niet genoeg in staat waren om 'er een' goeden en versterken-

den chijlus uit te bereiden, daarentegen zou een sterker Kind 'er wel door gevoed worden, en zelfs eene ruimer quantiteit kunnen noodig hebben.

Derhalve moet naar de verschillende krachten van den maag, darmen en het geheele ligchaam, de hoeveelheid bepaald worden; want de beste voedselen worden schadelijk, als zij door de natuur en ingewanden niet behoorlijk bereid en gekookt worden, om 'er de versterkende en voedende deelen uit te zuigen; Hippocrates zegt daar *in libro de locis* zeer fraai: *si corpus superat cibos ingestos, floret, corroboratur, bene coloratum efficitur et succulentum, sed si vincatur atque succumbat, ipsi quidem cibi per alvum secedunt et alia mala faciunt, corpus autem gracile redditur*: derhalve naar mate de krachten zijn, moeten zelfs de beste voedselen bepaald worden.

Zullen wij een beter voedsel voor de jonge Kinderen uitdenken, zoo zijn wij verplicht voor af te onderzoeken, welk een gebrek de gewone Melk-pap heeft, en welke wanorder dezelve in het ligchaam van het teeder wichtje veroorzaakt.

Het algemeene gebrek der gewone Melk-en Brood-pap is, dat zij spoedig goor en zuur

wordt, en dus reeds een voedsel geeft, dat overhelt tot die gebreken (ex defectu bilis) waar de jonge Kinderen het meeste voor vatbaar zijn.

De Melk over het algemeen is op Batavia en in Oost-Indiën slecht: De Melk gevende beesten grazen in de verzengde lucht-streek, op geene vette zoete klaver weide, en de nuttige Koe loopt daar niet met dikke en gespannen uijers tot over den buik in het malsche en voedzame gras, als in Holland; maar de Runderen hebben op verscheiden tijden van het jaar een schraal en mager voedsel, en dus zijn de dieren buiten staat om een goede en verkwikkelijke en regt-voedende Melk te geven. Deze zoo schraal voedende Melk met brood, meel, of beschuit gemengd, verstrekt laauw het Kind tot voedsel.

Alle meel met melk gemengde spijzen, zijn altoos geneigd om tot zuur overtegaan, en de warmte van de lucht doet dezelve spoedig goor en zuur worden, welke verzuring nog versneld wordt door het menigvuldig opwarmen; met deze zoo spoedig zuur wordende pap, of welke al eenige goorheid heeft, vult men de Kinderen op, en naar mate dezelve meerder schreeuwen, propt men meerder in, en dus worden de teedere wichten, welker meeste ziekte uit zuur voor-

komt, dag aan dag met een zuur voedsel gevoed, welk vele toevallen te weeg brengt. Welke wanorders nu door dit voedsel veroorzaakt worden, leert de dagelijksche bevinding, en *Rosen van Rosenstein* zegt met regt, alle de ziekten der Kinderen komen uit zuur voort: sommige Kinderen krijgen stuipen, andere worden door krampachtige buikpijnen gemarteld, of door geweldige buiks ontlastingen geteisterd, welke door het geweldig zuur de billen en teeldeelen ontvellen; eindelijk verdikt de buik, de lever en milt, de darmscheils vaten en klieren verstoppen, waar door een langdurige kwijning veroorzaakt wordt; de Kinderen worden hongeriger, en hoe meer men hun te eten geeft, hoe meer men de kwaal en toevallen vermeerdert, eindelijk teren de Kinderen als geraamten uit door de verzwakkende buikloopen, en sterven als een offer der onkunde en moeders grilligheden, door het onthouden van hare borsten of bekwamer voedsel.—

Hoe schadelijk ook de melk-pappen zijn en hoe sterk sedert een geruim getal jaren, de Geneeskundigen zich tegen die spijszen verzet hebben, zoo hebben zij doch bij de bekoorlijke sekse weinig of niets kunnen uitwerken, en wij moeten bekennen, dat alle voorstellingen, welke met de leering onzer grootmoederen strijdt, eenen mag-



tigen tegenstand vindt bij onze vrouwtjess; evenwel kan de herhaling nuttig zijn, want *Gutta cavat lapidem, non vi, sed sæpe cadendo*, of het eindelijk ingang mogte vinden.

Dewijl nu moeders niet kunnen, of niet willen, of ten minste weigeren hare Kinderen met haren eigen boezem te voeden, en de slaafsche minnen aan zoodanige gebreken onderworpen zijn, dat het onveilig is haar te gebruiken, en wij gezien hebben, dat de gewone melk-pappen spoedig ontaarden en bederven, en een slecht voedsel geven en ten tweede zeer spoedig een bijtend zuur in de ingewanden te weeg brengen, waar door een heirleger van ziekten aan die teedere wichjes te weeg gebragt wordt, zoo zijn wij verplicht zoodanig een voedsel of pap te bereiden, welke die ontarding zoo spoedig niet ondergaat, en zoo een bijtend zuur niet veroorzaakt, en daar door eene reeks van ongemakken en den dood zelven trachten aftewenden.

---

## TWEEDE AFDEELING.

Ons bestek gaat niet verder met de opvoeding der Kinderen, als tot zij in staat zijn om de gewone voedselen mede te kunnen gebruiken, en dat is, tot zij tanden en kiezen hebben om de

spijzen te kunnen vermalen, ten onder te brengen, en dus bij na half verteerd naar den maag en verder ingewanden ter bereiding te zenden; zeldzaam gaat onze bestiering dus langer, als tot dat de Kinderen één jaar oud zijn.

Het is de plicht van eene moeder-zelve hare Kinderen gade te slaan, en 'er is voor een Kind geen grooter geluk, dan door eene bekwame Moeder-zelve opgevoed te worden, is het niet met de borst, dan gewis met voedsel, dat het Kind noodig heeft; ten minste behoort de verstandige Huismoeder 'er bij tegenwoordig te zijn, als haar Kind gereinigd en gevoed wordt; want zulks aan de slavinnen alleenig aan te vertrouwen, is geheel en al zijn' moederlijken plicht te verwaarloozen; zelfs behoorden de moeders, zoo veel doenlijk is, het oog op de Kinderkamer te hebben, en de geheele behandeling der Kinderen na te gaan; want ons is bekend, dat sommige slavinnen, door de Kinderen te mishandelen en aan den navel te trekken, dezelve trachten om te brengen; ook zijn de bezigheden der Indische Vrouwen, zoo groot niet, dat deze plicht van haar niet zoude te vergen zijn, vermits de welvaart van de Kinderen daar van kan afhangen, en dienstboden en slavinnen zijn altoos vreemden, daar de eigen natuur aan ontbreekt,

Zoo dra het Kind geboren is, verdient het onze opmerking: wij gaan stilzwijgende voorbij, wat voor, in, en onder de verlossing van eene Vrouw te betrachten is, als mede alle die bagatellen, welke de Indische Vroed-vrouwen bij de geboorte van een Kind in gebruik hebben, en voeren maar aan die middelen, welke eenig en alleen noodig zijn, zullen Kinderen wel en gezond kunnen opgevoed worden.—De navelstreng moet met eenen dubbelden Katoenen draad afgebonden, en met eene scherpe schaar, twee vingers breed van den buik, afgesneden worden, en met geen mes, gelijk sommige Indische Vroed-vrouwen in gebruik hebben.—Langer of korter moet de streng niet afgesneden worden, niet langer, om de bederving niet te groot te maken, en niet korter, om des noods nog één bindsel te kunnen leggen. Zoo dra de navelstreng afgesneden is, moet het Kind aan eene helpster overgegeven worden, en de Vroed-vrouw verlost ter regter tijd, wanneer de baarmoeder zich zamentrekt, de Vrouw van de nageboorte, en verzorgt haar behoorlijk met een breeden sluit-band te bedde.

Men zorgt, dat het Kind, dan zuiver en rein gewasschen en van alle smeer gezuiverd worde, inzonderheid onder de armen, nek, billen en liesen, op dat de uitwaseming niet gecohibeerd worde,

om dus de gezondheid te bevorderen, en eene lastige ontvelling en uitslag voor te komen. Daarna moet men den navel verzorgen, vele Kinderen sterven voor den negenden dag in heete landen aan de zoogenoemde klem in den mond; misschien geeft de verrotting van 't bloed tusschen de binding en den buik daartoe gelegenheid; de be-roemde *van der Haar* schijnt mede tot dat gevoelen over te hellen, waarom men dit bloed uitdrukt voor de binding.

De navelstreng dient men op deze mijne gewone wijze te verzorgen: Men neemt een vierkant zacht lapje katoen of linnen van eene halve hand groot, en snijdt in het midden een gaatje zoo groot, dat de navelstreng er door kan tot aan den buik, en in dat drooge doekje windt men den navel, en daar over een klein druk-compres en navel-band. Het is nadeelig, en vooral in heete landen, de streng met olie te smeren, beter is het, dat men dagelyks het druk-compres 'er afneemt, en dan het ander doekje nat maakt met half arak en water, of brandewyn en water, of dat nog beter is met witten wijn; daar door voorkomt men de schadelijke uitwerking van de verrotting der navel-streng.

Wanneer de navel-streng zeer dun is en voor den derden dag afvalt, sterven gemeenelyk de

Kinderen binnen 14 dagen, gelijk de ondervinding mij en anderen geleerd heeft.

Zeldzaam hebben Kinderen van gezonde ouders geboren aanstonds voedsel noodig; en een Kind, welk men zonder borst wil opvoeden, moet men binnen 24 uren geen voedsel geven. De bangheid is ijdel, dat een Kind binnen 24 en meerder uren van gebrek aan voedsel zou sterven; veel eerder loopt het gevaar door het te vroeg eten te geven, dan te laat. De slijm uit den mond en maag, en de zwarte drek uit de darmen moet eerst ontlast zijn, eer men het Kind behoort te voeden, zie hier over *Ballaxer* Pag: 100, al mede *Rosen van Rosenstein, Camper &c.*

De eerste Moeder-melk is een heilzaam vocht om die slijm en drek te ontlasten.

Door de werkende kracht der Natuur wordt meesten tijd zonder voedsel de slijm en zwarte drek ontlast; is die daar in nalatig of traag, dan kan men door een weinig rabarber het zelve verkrijgen of begunstigen; een weinig spaansche zeep doet hier ook goede uitwerking.

Naa dat de eerste wegen behoorlijk zijn gezuiverd, krijgt het Kind honger, en dan moet men het voedsel toedienen en geven.

Een jong of nieuw geboren Kind is nu zeer

onverschillig in 't aannemen van voedsel, men kan het gewennen aan alle voedselen, welke geene prikkelende scherphheid hebben. Eene dunne pap, toebereid van enkel gekookt hartshoorn-water, met wel gegaste en tweemaal gebakken beschuit van best blommeel, is in de eerste acht, tien, twaalf, veertien of meerder dagen een alernuttigst, heilzaam en genoeg versterkend voedsel, mits het behoorlijk bereid en gegeven wordt. Men bereidt het hartshoorn-water op deze wijze: men neemt een vierendeel geraspte of gesneden hartshoorn, en kookt die in eene toegesloten pan, met vier flessen water, en laat het verkoken tot op twee flessen, welke men bewaart op een koele plaats, men giet op de beschuit zoo veel, als in eenen keer het Kind tot voedsel noodig heeft, warmt het in een porseleine of andere aarde pan, geeft 'er het Kind van zoo veel noodig is. In 't bijzijn van de moeder of onder hare oogen moet het Kind gevoed worden, om de drie of vier uren, niet eerder, op dat het voedsel behoorlijk kan verteren, en niet langer met voeden wachten, op dat het Kind niet opgeblazen of opgezet worde door te veel voedsel te gelijk te geven. Een' algemeenen regel moet men houden, dat, als de Kinderen slapen, men ze nimmer om het eten wakker make; in den nacht moet men zoo veel

vermijden als doenlijk is om het Kind eten te geven, en dus 'savonds het een weinig meerder geven, om dus den nacht zonder voeden door te brengen. Alle land-dieren en vogelen eten 'snachts niet; en het is maar een misbruik 'er de Kinderen aan te wennen.

Eer men het Kind voedt, moet men het opnemen en op den arm eenigen tijd om dragen, en zachtjes bewegen, losgemaakt zynde den buik wrijven, en dan te eten geven.

Men moet de overgeschoten pap liever weg doen, ten minste niet te veel te gelijk maken, op dat zij door het dikwils opwarmen niet ontaarde en bederve. Misschien is men beducht, dat in deze pap geen genoegzaam voedsel is om het Kind te doen groeijen en in krachten aan te nemen; ijdele vrees! menigvuldige malen heb ik met deze pap zeer vele Kinderen zeer goed zien opgroeijen, en daar onder verscheiden een half jaar lang, zonder van zuur of andere ongemakken gekweld te worden; daarenboven hebben de Kinderen van gezonde ouders geboren in de eerste weken geen sterker voedsel noodig, dewijl ze in zich zelve nog voedende vochten genoeg hebben, welke maar eenige versterking en ondersteuning van noode hebben, en dewijl 'er in de maag en

darmen en op de mondjes der melk-vaten, nog veel slijm zit, zoo moet het eerste voedsel zoodanig ingerigt zijn, dat het die slijmstofje afspoelt, en genoegzaam in staat is om opgeslurpt te kunnen worden; want het geen opgenomen wordt door de vasa absorbentia, voedt, en niet dat naar de dikke darmen vervoerd wordt.

Nu is 'er geen afvagender vocht, dan hartshoorn-water, inzonderheid, als het met versterkend brood gemengd wordt, om de krachten te onderhouden, en te doen aannemen; welk een' dienst hebben wij niet voor zwakke menschen van het Decoct: Alb: Sydenhami, dat enkel uit hartshoorn-vocht, brood en honig of suiker bestaat; en wij kunnen ook zonder schade een weinig honig of suiker bij de pap mengen; het vooroordeel dat de suiker en honig aan de Kinderen schadelijk is, steunt op zwakke gronden; men heeft maar te zorgen, dat men 'er geen misbruik van make en te veel geve.—Deze hartshoorn-water en beschuit-pap, heeft dat gebrek niet, welk men in de melk-pappen aantreft; voor eerst wordt het hartshoorn-water zoo binnen als buiten het ligchaam van 't Kind niet zuur of goor als de Melk; maar kan, als het op eene koele plaats bewaard wordt, eenige dagen voor bederving bewaard worden; en als het dan ontaardt, neemt



het eene zekere bederving aan, welke het zuur voorkomt en geneest; het is ook bekend, dat alle voedselen uit het dieren-rijk nuttig zijn om het zuur voor te komen, waarom de Geneesheeren om 't zuur te genezen, voedselen uit het dieren-rijk voorschrijven, ook spaansche zeep en alcali zouden aanprijzen. Ten tweede is deze pap spoedig gereed te maken; en ten derde ontlasten de Kinderen 'er zeer gemakkelijk van, blijven bevrijd van het bijtend zuur in de ingewanden, en krimpelingen in de darmen en van de lastige en verzwakkende diarrhee. Eindelijk heeft de ondervinding mij en anderen geleerd, dat de Kinderen zeer wel groeijen, sterk worden en rustig slapen.

De alom beroemde Hoogleeraar *Camper*, zegt in de Haarlemsche Maatschappij D. VII. Pag 403.

„ Mijne eigen Kinderen heb ik met de volgen-  
„ de pap laten voeden, waar bij zij zeer wel ge-  
„ varen zijn; even wel schrijf ik hunne sterkte  
„ ook veel toe aan het goed gestel, waar mede  
„ zij geboren zyn. Dit kan ik echter getuigen,  
„ dat zij zeer zeldzaam, met het zuur geplaagd ge-  
„ weest zyn. Neem dan (vervolgt zijn Ed.) de  
„ beste twee-bakken van tarwe-meel, kook die in  
„ een aarde pot met regen-water, roer dezelve met  
„ een houten lepel tot eene dikke pap, en zet die

„ dan ten gebruike weg; deze kan men eenen  
 „ dag, ook wel twee dagen bewaren, indien de  
 „ lucht niet te heet is. Zet daar van eene ge-  
 „ noegzame veelheid op het vuur, doe 'er een  
 „ weinig spaansche zeep toe, en verdrijf de bit-  
 „ terheid met suiker, giet 'er vervolgens zoo veel  
 „ koude zuivere koemelk by, als noodig is, om  
 „ opgeslurpt te kunnen worden. Indien deze  
 „ pap eens gewarmd zijnde niet geheel gebruikt  
 „ wordt, moet dezelve weg gedaan worden, om  
 „ dat tweemaal opgewarmde pap in den maag  
 „ der Kinderen eerder goor wordt.”

Deeze pap door mijnen grooten meester *Camper* aangeprezen heb ik hooorderde malen in Euro-  
 pa met de beste gevolgen zien gebruiken; doch  
 dewijl in Oost-Indiën de melk schraal en slecht  
 is, en door de heete lucht spoedig verzuurt, kun-  
 nen wy aldaar de melk zeer wel missen; de pap  
 van hartshoorn-water bereid, waarmede ik me-  
 nigvuldige Kinderen heb zien opvoeden, is zoo  
 versterkende en voedende, als die pap van Pro-  
 fessor *Camper*; voor eene menigte Kinderen zoo  
 wel als mijne eigene heb ik geen ander voedsel noo-  
 dig gehad, tot dat zy in staat waren om andere  
 spijzen mede te gebruiken.—

Wanneer nogtans Kinderen toonen, dat zij  
 meerder voedsel begeeren, of sterker voedende

spijzen noodig hebben, moet men daaglijks onder deze pap een of twee dojers van eijeren mengen; ook kan men zoodanige Kinderen daaglijks of om den anderen dag een dojer van een ei met of zonder een korrel zout, dat zeer versh en zacht gekookt is, te eten geven. De beroemde *van der Haar* heeft in de *Algemeene Vaderlandsche letter-oeffening*. IV deel, bladz. 304 &c. een klein stukje gegeven over het beste voedsel der Kinderen buiten de moeder-melk, en die nog nuttige 76 jarige grijsaard, schreef mij nog onlangs, dat hij nog geloofde, dat het, het beste voedsel was, zelfs in heete landen.

Die beroemde man door eene langdurige onder vinding gesterkt, prijst zeer aan twee loot kalfs-vleesch gekookt in een bottel water, met beschuit of korsten van wel gegest oudbakken brood, somtijds met of zonder een dojer van een ei, als het beste voedsel voor Kinderen; en ik geloof niet alleen, maar ben door ondervinding verzekerd, dat zoodanig eene niet te dikke pap, voor Kinderen nuttig is, welke meerder voedsel noodig hebben, en reeds 2, 3, 4, 5, 6, of meerder maanden oud zijn. Men kan in Oost-Indiën, dewijl het kalf-vleesch zoo verkrijgbaar en goed niet is, nemen twee lood hoender-of kapoenen vleesch en een half lood vogelnesjes gekookt op

eene bottel water, en nemen, na het wel gekookt is, het vleesch 'er uit, en dikken de soep aan met gestampte beschuit, het welk voor de kinderen in 't algemeen een zeer goed voedsel is; en met dit voedsel zullen de kinderen groeijen en sterk worden; Ja men kan hen daar mede voeden tot een jaar en meer toe, mits men de hoeveelheid van 't vleesch iets vermeerdert, en zomtijds een zacht gekookt eijer-dojer en een klein boterhammetje tusschen beide geeft; en zyn de kinderen dorstig, kan men hen gerust een glasje water en melk, of melk met selserwater te drinken geven; die weinige melk zal de kinderen geene schade toebrengen, te meer dewijl 'er weinig vrees voor zuur is onder het gebruik van die versterkende en het zuur tegenstaande voedselen.

Men kan ook in plaats van beschuit somtijds sago meel nemen, om onder het voornoemde vleeschnat of onder het hartshoorn water te mengen, merk nogtans aan, dat men, zoo veel doenlijk is, ongegeste meel spijsen vermijde, hoewel ik menigmaal de sago voor kinderen toegediend heb, en zeer wel 'er de kinderen bij bevonden heb.

Uit deze mijne verhandeling blijkt dus genoegzaam, dat wil men gelukkiger zijne kinderen opvoeden, men de voedselen moet zoeken voor kinderen in 't dierenrijk: hoender-en kapoenen-nat,

kalfsvleesch-nat en dunne soep van buffelvleesch, zijn met wel gegest brood of beschuit als de beste voedselen voor de kinderen aan temerken, inzonderheid, als men 'er somtijds een of meerder dojers van eijers ondermengt, en nu en dan tusschen beide de kinderen een zacht gekookt eijerdojer te eten geeft.

Naar mate nu de kinderen ouder worden, dient men ook de hoeveelheid te vermeerderen, en zoo spoedig doenlijk is, nu en dan andere voedselen mede te eten geven; ik twijfel niet, of men zal in staat zijn, om met deze voorgestelde wijze van voeden, als 'er tevens eene goede bestiering plaats heeft, met de kinderen gelukkiger te slagen.

De rijst-bier-wijn-en water-pappen zij in Oost-Indiën ondienstig. De rijst geeft de Kinderen te weinig voedsel en vult te sterk op; het Vaderlandsche bier fermenteert altoos, en is veel te geestrijk om voor voesel te gebruiken, want een vocht, dat een jaar in de vaten gelegen heeft, de heete keerkringen gepasseerd is, is een ongeschikt vocht voor kinderen; niemand, die een aas gezond verstand heeft, zal zulks aanprijzen, en wien is in Oost-Indiën onbekend, welke hevige beroeringen door het bier in bejaarde menschen te weeg gebracht worden. Over de wijn en water-pappen kan ik geen gunstiger oordeel vellen, en ben ver-

zekerd, dat men dezelve allen missen kan, als men zijne toevlugt neemt tot voedselen uit het dieren rijk—Van zelfs nogtans blijkt, dat de verstandige Huismoeder behoort acht te geven, dat haar Kind niet te veel noch te weinig toegediend worde, en de overige bestiering behoorlijk zij. Ook behoort men acht te geven, of het Kind dagelijks genoegzame ontlasting heeft. Te veel verzwakt, te weinig ontrust en benaauwt de Kinderen. Zoo geene genoegzame ontlasting plaats heeft, kan men het Kind met een pisang of pieterselie steeltje in olij gedoopt, of met een zet-pil van spaansche zeep in den anus prikkelen.

Inzonderheid is zulks nuttig 'smorgens, als men eerst het Kind gevoed en geene ontlasting gehad heeft. Men moet van jongst op de Kinderen gewennen op eenen vasten tijd aftegaan, en indien men daar moeite toe doet, kan men de Kinderen en ook ouder menschen bevrijden van hardlijvigheid. Het is de moeite waardig hier over na te zien *Locke, over de opvoeding der Kinderen* bladz. 38, 39 &c. Zeldzaam moet men tot medicijnen overgaan, doch als het de nood vereischt, is de rabarber en deszelfs sijroop het eenigste en heilzaamste middel om de ontlasting te bevorderen, vermits de rabarber onder alle ontlast-middelen het eenigste darm versterkend is.—

Is de ontlasting te veel, en te dun, en van 't zuur voortkomende, kan men in een' dojer van een ei drie of vier grein sal tertari mengen met een weinig suiker, en somtijds 'er wat van ingeven, of wat spaansche seep onder de pap mengen. Ook kan men van de zuur opslurpende poeders nut hebben, inzonderheid als een weinig rabarber te voren gegeven is, als van de *Mignes. Alb. Coral. Rubr. pulv. Corn. Cerv. Ust.*: en inzonderheid wanneer 'er geweldige krimpelingen plaats hebben, behaagt mij een drankje van venkel-water, krijgt en sijr. diacodii, waar van men somtijds een' lepel kan in geven.

Hier mede zal ik deze besluiten onder toewensching van 's Hemels zegen over Uwel Ede. en zeer geleerde Heeren, en eenen langdurigen bloei en welvaart van 't Bataviasche Genootschap.

Ik heb getracht kort te zijn, en ben nog in vele zaken lang geweest, doch hoop niet onnut, ten minste vlei ik 'er mij mede, en bedien mij van de zinspreuk:

*Ego fateor, me ex eorum numero esse conari, qui proficiendo scribunt, et scribendo proficiunt.*

AUGUSTIN, Epist. 143.





## II.

---

*BERIGT wegens de zeden en gewoonten der  
Opgezetenen van den Berg BRAMA en  
bygelegen Volken op het Eiland JAVA, ge-  
trokken uit een' brief van den Heer ADRI-  
AAN VAN RYCK, Commandant van  
Passourouang aan wylen den Heer HOOY-  
MAN, geschreven den 26 Mei 1785. (\*)*

**D**e tegenwoordige Bewoners van den Berg *Brama* moeten onder de gewone Mahometanen gerekend worden; voor het uitwendige althans eerbiedigen zij derzelve wet, dan zijn op verre na zoo Godsdienstig niet, als de Westersche of Noordsche Strand-volken; hunne onachtzaamheid gaat zelfs zoo ver, dat, schroomden ze niet de verachting van de andere Javanen, zij zich mogelijk niet eens zouden laten besnijden, en nog minder de Mahometaansche Huwelijks-en Begravenis-plegtigheden in acht nemen: Nu doen ze het om vorige reden, en zijn 'er toe verplicht,

---

(\*) Deze brief diende ten antwoord op eenen van den Heer *Hooijman*, waar in zijn Eerw: meenende, dat nog eene soort van Volk daar zoo woest was, dat niet lang geleden 'er een mensch geofferd ware, daar omtrent van den Heer van *Rijk*, eenig narigt verzocht had.

om dat ze allen onder de Regentschappen van *Passourouang* en *Probolingo* staan, en dus ook der Compagnie hulde doende, zoo wel als andere Inlanders, hunne Lands-wetten onderhevig zijn.

Het vertelsel, dat ze niet lang geleden een' mensch zouden geofferd hebben, komt derhalve vreemd voor: na een naauwkeurig onderzoek heeft men 'er niets van kunnen ontdekken.

Veelligt spruit het voort uit het fabelachtig verhaal der oudsten dier Berg-volken van hunne aloude afkomst, welk, gelijk als de andere Javaansche Historien, gebrekkig, duister en vol versiering, echter met vele moeite in afschrift gezocht, eindelijk verkregen, en hier achter geplaatst is.

Alle die Berg-volken daar omstreeks zijn in hunne gewoonten en zeden bijna gelijk aan de andere Javanen, die in de laagten en aan de Noorder stranden wonen; schoon dommer in vele zaken dan deze, zijn ze daar en tegen veel opregter en minder ijverzuchtig en moorddadig. Bij eene dertien-jarige ondervinding vernam men onder hen noch moord of diefstal.

De Polygamie, die oorzaak van zoo vele onheilen op *Java*, vindt zoo min als hoererij onder hen plaats.

Hunne verregaande blindheid en bijgeloof

kan, ten voorbeelde, daar uit blijken, dat ze op den geheelen *Brama* en de aangrenzende *Tingersche* en *Tjierische* Gebergten geene *Padie* zullen planten, en zelfs geene rijst uit de *Padie* stampen, in de gedachte, dat ze daar door aan hun land en personen het grootst onheil zouden veroorzaken. Hoe min halsterrig anders en gemakkelijk te bestieren, zijn ze op geenerlei wijs van dit denkbeeld af te brengen.

Hun gewone arbeid is de Land-bouw, die meest bestaat in het planten van roode en witte *Uijen*, *Jarak*-pitten tot olie, en *Mais* of zoogenoemde *Jagons*. Met beide eerste artikels drijven zy handel aan de *Stranden*, terwijl het laatst gemelde hun tot daaglijksch voedsel strekt. Sommigen vermengen het zelve met wat rijst, die ze in de laagte wit gestampt zijnde, benevens hun zout, *bladjan*, *klappus* olie, potten en andere benoodigheden komen koopen, of tegen hunne voortbrengsels inruilen.

Hunne woningen verschillen veel van die der *Westersche Javanen*, zijnde geheel langwerpig, doorgaans van 60 tot 80 voeten lang, en van 16 tot 20 breed, rondom met planken uit gemeen boschhout gekapt bezet, van binnen met bamboezen matten beschoten, en van buiten met grond of liever gras-zoden belegd, en met bamboezen of zoogenoemde *klakas* gedekt: deze

dubbelde beschieting hunner huiswanden geschiedt tegen den doortogt der aldaar scherp waaijende winden.

In zoo een huis, waar gewoonlijk drie of vier familien wonen, zyn aan het eene einde slaapplaatzten twee aan twee over malkanderen geplaatst; de vuursteden, van welke het vuur dag of nacht niet afwezig is, zijn tusschen beide; daar door beschermen zij zich tegen de koude, die op alle die gebergten aanmerkelijk is.

Door dit gestadig vuurstoken vindt men in die huizen meesttijds zoo veel rook, dat een Europees het 'er naauwlijks kan uithouden; hen verveelt het niet door de gewoonte; zij weten 'er dit nuttig gebruik van te maken, dat ze eerst gedolven Uijen en versch gesneden Jagons op zolders, die van bamboezen gemaakt zich inwendig over het geheel huis uitstrekken, droogen en voor bederf hewaren.

Bij de besnijdenis hunner kinderen, nemen ze, een ieder naar vermogen, dezelfde ceremonien en gebruiken in acht, als alle andere Javanen, bedienende zich daar toe van Priesters van de naast aan het gebergte gelegen Negerijen.

Bij het aangaan van een Huwelijk, welk bij hen ook in zoo vroege jeugd niet geschiedt,

als bij de Westersche Strand-Javanen of aan de Hoven der Vorsten, komt de Manspersoon af, om bij den Regent de vereischte licentie te verzoeken; Deze met het daar toe behoorrende bewijs verkregen hebbende, gaat weder naar boven, en meldt het zijne en de Ouders of Vrienden van de aanstaande Bruid, die hij 'er tevens van kennis geeft. De dag besloten zijnde om het Huwelijk te voltrekken, komt de Bruidegom verzeld van zijne en der Bruids ouders, of wel de oudsten uit hunne Familien, als getuigen, wederom af, zonder de Bruid, en laat zich in de Maziehiet of zoo genoemden Moorschen Tempel op de Hoofd-negerij trouwen, vertrekt na deze verrigting weder naar boven, en keert bij zijne getrouwde vrouw in; geene ceremonie heeft uerder plaats, dan een maaltijd onder de Familie en de lieden van het gehucht, welk bij sommigen vereenigd gaat met eenig muziek naar hunne wijs.

Bij het begraven hunner dooden volgen zij mede het Mabometaansch gebruik; uitgenomen dit ééne, dat het 'er bij hen niet op aan komt, naar welke streek ze met het hoofd liggen; daar in tegendeel een ander Javaan altijd, naar de wet, met het hoofd in het zuiden, en de voeten noordwaarts begraven wordt.

*VERHAAL, zoo als de Oudsten der Volken van BRAMA, TINGERS en verdere aangrenzende Gebergten tegenwoordig van hunne aloude afkomst opgeven, en ook de reden waar om thans daar wel Uijen &c. doch geene Padie planten.*

Volgens hun zeggen, stammen zij af van eenen Poetro en Poetri, die broer en zuster waren, en kinderen van eenen nog Heidenschen Sultan of Kieij Geedee van *Bantam*, waar van zij echter den naam niet weten, die, om dat zij bij hunne ouders en andere broeders en zusters niet wel gezien waren, met eenig gevolg hun fortuin gingen zoeken, om zich elders neer te zetten, en hebbende daar toe in het westen geen terrein gevonden, dat onbewoond was, of hun aanstond, wylze onder niemand wilden staan, zijnze tot hier in dit gebergte, dat toenmaals nog onbewoond was, gekomen, en dat als eene eenzame plaats naar hunnen zin vindende, hebben zich alhier ter neder gezet.—

Gezeten zijnde, liet die mannelijke Poetro zich van de zijnen als hoofd alhier noemen *Kieij Dadap petak* en overwon bij zijne vrouw vijf en twintig kinderen, waar door zeer verlegen werd dezelve te onderhouden, te meer, daar zijn onderhoorig volkje ook al sterk vermenigvuldigde, welk een geheel gebrek aan voedsel ten wege

bragt, ja zoodaning, dat *Dadap petak* als in wanhoop uitriep voor zijne ganschē gemeente, Indien ik zoo verre mogte gezegend worden, dat ik Ulieden en alle mijne kinderen kan voeden en onderhouden, zoo als 't behoort, dan wil ik gaarn een van mijne kinderen opofferen aan den brandenden Berg *Dassar*. Tot dien tijd hadden zij zich beholpen, met kruid, wortels en eene soort van gierst *djawa* of door de wandeling *dje-wawoot* genoemd, om het welk te zoeken zij al ver op de naastgelegen gebergten moesten klimmen. Bij deze gelegenheid ontwaarden zij op den berg *Mameroe*, dat daar menschen woonden, waar zij naar toe gingen en onderzochten wie zij waren; boven komende bevinden zij dezelve te zijneen' man en vrouw, die daar zoo genoemde *Tappas* waren; de man was genoemd *Sanjang Wisexo*, en zijne vrouw *Dewie Soeporbo*, aan wien *Kiey Datap petak*, zijnen ellendigen staat te kennen gaf, en om hulpe verzocht, dewijl die *Sanjang Wisexo* en vrouw beide personen waren, die zeer heilig leefden, en veel vermogten met hunne krachtige voorbidding.

De *Tappas* bsloofden hem daar bij indachtig te zullen wezen; gelijk zij hem dan ook een dag of twee daar na te kennen gaven, dat *Dewie Soeporbo* 's nachts slapende, in hare hand had ontvangen twee zaden, waar van het een rood en het ander wit was, welke zij 's morgens

opstaande aan haren man vertoonde, die haar daar op berigtte, dat, 'er tot hem 's nachts in den droom eene zoo gen: *Suwara awang awang*, of stem uit de lucht was gekomen, die hem gezegd had, De twee zaden, die uwer zuster heden nacht toegedeeld zijn, zult gij noemen *Bawang abang* en *Bawang epoeti*, of roode en witte uijen, en die aan *Kiej Dadap petak* afgeven, om alhier in deze gebergten voort te planten, die daar dan met alle nakomelingen een ruim bestaan uit zullen vinden; en tot daaglijkschen mond-kost zult gij hem waarschouwen, dat hij allerhande aard-en peul vruchten, doch geene Padie, waar uit men rijst stampt, zal mogen aanplanten, want dat gebod overtredende zoude hij en alle menschen, die dit land nu en naderhand bewonen, met het land zelve in ongeluk komen.

*Kiej Dadap petak* ontvong voorn: zaden, plantteze van tijd tot tijd met de zijnen voort, vond twee jaren daar na daar al een ruim bestaan uit met zijne Familie en onderhoorigen.

Toen indachtig wordende zijne belofte is gedaan in zijnen armoedigen staat, stelde die zijner gemeente voor, die hem aanraadde, ten beste van zijn land en volk, daar aan te voldoen; daar op nam hij zijn jongste zoontje, bragt het na den brandende berg *Dassar*, en wierp het in den vuurkolk.



### III,

---

## *SCHEIKUNDIGE Ontleding van een Vulkaansch Zand en een Yzer-erts.*

DOOR

THOMAS HORSFIELD, MED. DR.

---

#### I. SCHEIKUNDIGE ontleding van een vulkaansch Zand.

In den nacht tusschen den 6den en 7den April 1803, en gedurende eenige uren des laatstgemelden daags werd eene fijne, zwarte, zandachtige stoffe in de Stad, en in den omtrek van Batavia, uit de lucht zeer langzaam neêrgestort. In 't begin was het niet bekend waar deze stoffe van daan kwame, en de meeningen daar omtrent waren verdeeld: na verloop van eenige dagen werd narigt uit de bovenlanden verkregen, dat de Donderberg, de Goenoeng Goentoer, in het district Timbangantang, van den 3den tot den 15den April hevig gebrand, en zeer groote hoeveelheden Lava en Zand uitgeworpen had; de fijnste deelen van dit zand waren door de zuidelijke winden tot op Batavia overgevoerd.

Het oogmerk der volgende Proeven was te bestemmen, in hoe verre dit zand in bestand-deelen met de gewone Vulkaansche uitwerpselen ooreenkwame, en het blijkt daaruit, dat hetzelfde slechts eene verbrijzelde Lava is.

De kleur van dit Vulkaansche Zand is zwart ofzeer donker graauwachtig, en in eenige hoeveelheid verzameld zijnde lijkt hetzelfde naar een allerfijnst poeder, waarin eenige glinsterende deeltjes waargenomen worden; hetzelfde wordt sterk van den Magneet aangetrokken.

PROEVE I. Twee honderd greinen van dit Zand werden in eene once Konings water, dat met eenige oncen gedestilleerd water verdund was, een uur gekookt; de vloeistoffe werd nu door filtrering afgezonderd, en het overblijfsel, met gedestilleerd water uitgewasschen zijnde, werd zorgvuldig gedroogd; het woog naauwkenrig *honderd vijf en zeventig* greinen.

PROEVE II. Uit de solutie werden de opgeloste deelen door het planten loog-zout neêrgeploft, die op het filtrum wel uitgewasschen en zorgvuldig gedroogd, *dertig greinen* wogen.

PROEVE III. Dewijl het van de Ite Proeve overblijvend Zand nog gedeeltelijk van den Magneet aangetrokken werd, zoo werd het zelve met verdund zwavel-zuur, bij herhaling ge-

kookt, tot dat zich geene oploselijke deelen meer toonden; het onoploselijk overblijfsel werd, uitgewasschen zijnde, op het filtrum verzameld en gedroogd, het woog *honderd acht en vijftig* greinen; niets daarvan werd thans van den Magneet aangetrokken.

PROEVE IV. Tot deze, door het zwavel-zuur gemaakte solutie, werd zoo lang planten loogzout gevoegd, tot geene neêrploffing meer plaats had — Het gedroogde neêrplofsel woog *vijf en twintig* greinen.

PROEVE V. Het neêrplofsel der laatste Proeve, wegend vijf en twintig greinen, en dat der tweede Proeve, wegend dertig greinen, werden gemengd en met gedestilleerden azijn gekookt, om de kalk of bitteraarde, die zij inhouden mogten, optenemen.—De onopgeloste deelen werden op het filtrum uitgewasschen, en daarop zorgvuldig gedroogd; zij wogen naauwkeurig *vijf en twintig* greinen.—De azijn werd tot droogte uitgewasemd, en op het overblijfsel verdund zwavel-zuur gegoten, om zich met de kalkaarde tot seleniet (of *sulfas calcis*) en met de bitteraarde tot bitterzout (of *sulfas magnesia* of epsom zout) te verbinden. Eenige oncen gedestilleerd water werden 'er bij gevoegd, om

het bitterzout van den onoplosselijken seleniet, aftescheiden.

Uit de doorgezijsde vloeistoffe, werd door het planten loogzout, de Bitteraarde neêrgeploft, die gedroogd *vijf* greinen woog.

De gedroogde Seleniet woog *achtien* greinen; (waarvan omtrent twee derde gedeelten kalkaarde of twaalf greinen, het overige zwavel-zuur en water waren ).

PROEVE VI. Het, na de behandeling met azijn zuur overblijvende neêrplofsel, dat vijf en twintig greinen woog (zie laatste proeve) werd in verdund zeezout zuur opgelost: Tot de oplossing werd blaauwzuur loog zout (*Prussias potassae*) gevoegd, zoo lang als eenige neêrploffing plaats had.

Het blaauw-zure ijzer (of Berlijnsch blaauw) werd op een filtrum verzameld, met planten loogzout gekookt, en met gedestilleerd water wel uitgewasschen; hier door werd het blaauw-zuur opgenomen, en het ijzer alleen overgelaten, welk gedroogd *tien* greinen woog.

PROEVE VII. Tot de gefiltreerde vloeistoffe, na de afscheiding van het blaauw-zure ijzer, werd zoo lang planten loogzout gevoegd, tot geene neêrploffing meer plaats had.—Het neêr-

plofſel werd met gedestilleerd water wel uitgewaſſchen en gedroogd, het was zuivere Aluinaarde, en woog *dertien* greinen — Twee honderd greinen van dit vulkanische Zand beſtaan dus uit

|     |         |              |             |
|-----|---------|--------------|-------------|
| 5   | greinen | Bitteraarde, | Proeve V.   |
| 12  | ————    | Kalkaarde,   | Proeve V.   |
| 10  | ————    | Yzer,        | Proeve VI.  |
| 13  | ————    | Aluinaarde,  | Proeve VII. |
| 158 | ————    | Kiezelaarde, | Proeve III. |

---

|     |         |   |
|-----|---------|---|
| 198 | greinen | } |
| 2   | verlies |   |

---

200

Volgens naauwkeurige ſcheikundige ontleding beſtaan de gewone vulkanische voortbrengſels als Lava, Basalt &a. uit Kiezel-Aluin- en Kalkaarde met een weinig Magnesia en Yzer, in verſcheidene evenredigheid van menging; de overeenkomst van dit zand in beſtand-deelen met deze vulkanische zelfſtandigheden aantoonen, was het oogmerk der verhaalde proeven.

## II. Scheikundige proeven met het Maſſoe-rong.

De mineraliſche zelfſtandigheid, welke het onderwerp der volgende proeven is, is eene *Yzer-erts*, welk in de Jakatrasche Bovenlanden gevonden wordt: de ſtukken zijn van ver-

schillende grootte, van eene halve drachma tot eenige ponden in gewigt; de kleur van buiten is witachtig-geel, en glanzend; zij zijn bros en laten zich ligt in stukken slaan, van binnen zijn zij ligter van kleur en meer glanzend. De meeste stukken zijn ongeregeld gekristalliseerd; eenige hebben de gedaante van regelmatige vierzijdige, toegespitste kristallen; van de Inlanders worden zij veel tot knopen verwerkt; De gewone Hollandsche benaming is *staal-steen*.

De volgende proeven toonen de bestanddeelen.

PROEVE I. Een honderd greinen dezer Yzer erts klein gestampt zijnde, werden in eenen kleinen bedekten kroes, een half uur, aan eene hevige hitte blootgesteld; toen de kroes geopend wierd, ontvlamde de masse als pijrophorus, en menigvuldige zwavel dampen stegen in de hoogte; sporen van Arsenic toonden zich niet. Na de verkoeling woog de massa *vijf en zeventig* greinen—Zij was thans van donker bruine kleur, en liet zich gemakkelijk tot poeder wrijven.

PROEVE II. Een honderd greinen, fijn gestampte Massocrong, werden met eene once verdund zee-zout zuur gekookt; gedurende de

koking ontwikkelden zich vele zwavel dampen.— De vloeistoffe werd afgezonderd en het restant wel uitgewasschen; het woog gedroogd *negentig* greinen, en werd nog sterk van den Magneet aangetrokken.

PROEVE III. Dit restant werd in eenen kleinen kroes, met 15 greinen kolen stof gemengd, en een uur lang sterk gegloeid; het overblijfsel werd nu bij herhaling met verdund zwavel zuur gekookt, tot niets meer opgelost werd; op de vloeistoffe zwommen glanzende schilfertjes, die op 't vuur, als zwavel roken. Na geschiede oplossing woog het restant *twaalf* greinen, van den Magneet werd het niet aangetrokken; het was grootstendeels Kiesel-aarde.

PROEVE IV. De solution der IIde en IIIde Proeve wierden gemengd, en door het planten loog-zout alle opgeloste deelen neêrgeploft, die op het filtrum, uitgewasschen en daar op gedroogd wierden.—Zij wogen *zeventig* greinen.

PROEVE V. Deze zeventig greinen, werden in zes oncen gedestilleerden azijn gekookt; de onopgeloste deelen door filtrering afgezonderd, en de azijn tot droogte uitgewasemd; verdund zwavel zuur werd toegevoegd, om de mogelijk aanwezende Kalk-aarde van de Magnesia te schieden; de onopgeloste deelen, welke selo-

niet waren, wogen gedroogd *twee* greinen; en uit de met gedestilleerd water verdunde vloeistoffe werden door het planten loogzout *drie* greinen Magnesia (Bitteraarde) neêrgeploft.

**PROEVE VI.** De na de kooking met azijn onopgeloste deelen (der laatste proeve) werden in zeezout zuur opgelost en met water verdund; blaauw zuur loogzout werd toegevoegd tot geene neêrploffing meerplaats had; het neêrplofsel werd door filtrering afgezonderd en met planten-loogzout gekookt; de wel uitgewaschene en gedroogde Yzer-kalk woog *negen en veertig* greinen.

**PROEVE VII.** Uit de gefiltreerde vloeistoffe (der VIde Proeve) werden door het planten-loogzout zes greinen Aluin-aarde neêrgeploft.

Volgens deze proeven bevatten 100 greinen Massoerong,

25 greinen Zwavel, Proeve I.

49 ——— Yzer-kalk, Proeve VI.

23 ——— Aardachtige deelen,

Pr. III, V en VII.

3 ——— (voor verlies)

100 greinen.



## IV.

---

*OVER DE RIVIER VAN SOLO in een' brief  
aan de Dirigerende Leden van het Ba-  
tavijsche Genootschap.*

WEL EDELE ZEER GEACHTE HEEREN !

I.—**I**N 't begin der maand November, laatsten Jaars, had ik de eer aan den Wel Edelen Heer Secretaris van 't Genootschap een beknopt narrigt van mijne verrigtingen in de Javaansche Bovenlanden, sedert mijn vertrek van Salatiga in de maand Julij, toetezenden: ik meldde tevens dat het mijn voorhebben was, mijne reis langs de Rivier van Solo, naar Grisseë voorttezetten. Mijne nasporingen in de Javaansche Bovenlanden zoo verre geeindigd zijnde op het tijdstip, dat de Rivier door de vroeg ingevallen regens wederom bevaarbaar geworden was, oordeelde ik dienstig, om van de aan handen zijnde gelegenheid gebruik te maken, om met een naar den Oosthoek van Java aftegaan, terwijl ik te gelijker tijd het inzicht had, om de kanten dezer Rivier natesporen.

2.—Ik vertrok dus met de twee leerlingen uit de Marineschool, den 9den November van Soerakarta. Deze Rivier, die gewoonlijk de *Rivier van Solo* genoemd wordt, is waarschijnlijk de grootste van het eiland Java; ontspringt in de gebergten van Kadoewang (een der Zuidelijke Regentschappen der Javaansche Bovenlanden) op eenen geringen afstand van het Zuider-strand, en vervolgt haren loop bijna noordelijk, schoon met veel bogten kronkelende, tot Soerakarta; hier neemt dezelve eene bijna oostelijke rigting aan; omtrent eene halve dagreis ten oosten van Soerakarta bereikt men de grensscheiding des Mattarams; vervolgens slingert zich de Rivier door de Regentschappen van Soekkowatie, Djo-goroogo, Madioen, Djie pang en Bloera (die onder de vorsten van Java behooren) heen; waarop zij door de Strand-Regentschappen van Toeban, Sidajo en Griessee haren loop tot in zee vervolgt.

3.—De toestand des landbouws is in de verschillende Regentschappen zeer verscheiden — De Mattaram is, als bekend, over 't algemeen in eenen volkomenen graad van kultuur; zoo is ook het Regentschap van Soekkowatie.

Uitgestrekte Rijstvelden, plantagien van Tabak, Djarak, Turksch koorn (of Djagon) Nila,

en vele anderen der gewone huishoudelijke gewassen, wisselen gedurig met Dessas van meer of minder grootte af. Het Regentschap van Djogoroogo is in 't algemeen weinig bebouwd, en beide kanten der Rivier zijn, behalve maar enkele gecultiveerde streken, met uitgestrekte wouden en bosschen begrenst. De Regentschappen van Madioen en Djiepang zijn reeds in eenen volkomenen graad van bebouwing. Blocra is grooten deels met bosschen bedekt.

De Strand-regentschappen van Toeban en Sidajo bereikt hebbende, ontwaart men eenen in 't oogvallenden verbeterden toestand aller kulturen; ook zijn de Dessas of Dorpen grooter, zindelijker en beter gebouwd.

4.—Van den oorsprong af, en door de Mattaram, Soekkowatie, Djogoroogo en Madioen is 't bed der Rivier rotsachtig en de loop meerendeels snel; bij Awe eene groote Chinesche Tolpoort aan de grensscheiding der Regentschappen Madioen en Djiepang, aan den Oostkant der Rivier gelegen, stort zich de Rivier van Madioen, (welke bijna van dezelfde grootte is,) in die van Solo, een weinig beneden deze vereeniging wordt de loop bedaarder, en de Rivier stroomt geregeld en statig voort, tot in Zee.

5.—De Bosschen langs de kanten in de Regentschappen Djogoroogo en Bloera bestaan meerendeels uit jati-boomen, met de gewone Boomsoorten onder gemengd, die men in Jati bosschen ontmoet.—Hiervan heb ik een' Catalogus met een getal gedroogde voorbeelden verzameld, welken ik met een uitvoeriger berigt aangaande mijne Reis en bemerkingen, de eer hebben zal, het Genootschap aanbieden.

6 — Deze Rivier is van groot belang voor den handel der Javaansche binnenlanden; een groot getal prauwen gaan dezelve jaarlijks naar Grissée af, met de voortbrengselen der aan dezelve grenzende Regentschappen beladen. Deze vaartuigen zijn van zeer verschillende grootte; de middel-soort laadt 15 tot 25, de grootere 50 kojangs. Enkelde van 100 kojangs vertrekken jaarlijks van Soerakarta.—Hier uit blijkt de grootte en diepte dezer Rivier.

Kleinere prauwen kunnen dezelve tot Soerakarta en nog verder naar boven, met uitzondering der droogste maanden van August en September, het geheele jaar door bevaren; de grootere echter vertrekken, na dat dezelve door de regens aangezwollen is, in de maanden December en Januarij. In 6 tot 8, (soms tijds in 3 tot 4) dagen gaan dezelve naar Grissée, de terug-

reis vereischt 3 en in sommige gevallen 4 maanden; zij kunnen dus jaarlijks maar eene reis doen, In de maand Mei komen zij gewoonlijk te rug naar Soerakarta, voornamelijk met zout en andere behoeften en vele goederen voor 't vertier en den handel der Binnenlanden beladen.

De in de Javaansche Bovenlanden voortgeteelde Peper gaat jaarlijks in de maand Januarij met eene vloot van 10 tot 12 vaartuigen, gewoonlijk van 50 koijangs, van Soerakarta naar Grissée af, onder de benaming der *Peper-vloot*.

7.—Den 18den November kwam ik op Grissée, van waar ik terstond mijnen weg naar Soerabaija vervolgde.

8.—Hier vond ik noodzakelijk eenige weken te besteden tot het zorgvuldig nazien der gedurende mijne Reizen verzamelde planten en Medicijnen, om dezelve tegen bederf van Insekten en vocht te bewaren. Vervolgens schikte ik mij om voor het doorkomen der regens, nog een binnenlandsch Reisje te ondernemen, en vertrok den 12den December naar Passoeroewang. Mijn oogmerk was cen' uitstap te doen naar het Tinggersche Gebergte, het welk op den afstand van omtrent 6 uren zuidelijk van deze Hoofdplaats gelegen is. Dit is een uitgestrekt Gebergte van middelmatige hoogte, het

welk van het Oosten naar 't Westen door het geheele Regentschap van Passoeroewang heen loopt, en wiens voet nog een gedeelte des Regentschaps Banger in 't Oosten en Bangil in 't Westen beslaat.

9.—Het Tinggersche Gebergte is in opzigt van ligging en vruchtbaarheid een der belangrijkste Gebergten van Java—de vlakten langs deszelfs voet zijn met Rijst-velden en Jati-boschen bedekt. De lang uitgestrekte en zich zacht schuins verheffende Noordkant levert uitgebreide streken van vruchtbare gronden, die tot de voordeeligste kulturen, en voornamelijk ook tot de Koffij-teelt voortreffelijk geschikt zijn. De top des bergs bestaat uit eene aan een geschakelde reeks van heuvelen, wier kanten in enkele gevallen wel steil, in de meeste echter schuins en geregeld afhellend zijn. Deze heuvelen met de tusschen liggende valleijen leveren eene streck, welke de meeste gelijksoortigheid heeft met verscheidene der zuidelijke landen van Europa. Deze gesteldheid van lucht en grond wordt wel in verscheidene andere deelen des Eilands, voornamelijk aan de kanten der groote vuurbrakende bergen aangetroffen; hier echter is de uitgestrektheid veel grooter, want de geteete top van dit uitgebreide Gebergte kon,

met de uitzondering van eenige steilten, in vruchtbare bouwlanden veranderd worden.

10.—Over 't algemeen is de groei des Planten-rijks in de aarde des Tinggers driftiger en weelderiger dan in de andere deelen des Eilands. Gewassen, die ik elders als kleinere plantjes gevonden heb, stonden hier als heesters, en vele heesters hadden de grootte van middelmatige boomen.

11.—De grondslag of basis van het geheel Gebergte is Lawa, welke aan de oppervlakte reeds sedert ondenkelijke tijden ontbonden, en in vruchtbaren grond veranderd is. De Berg is een volkaan, en wel een der voornaamsten des Eilands—De Crater bevindt zich in het midden van het Gebergte (van 't Oosten naar Westen gerekend) en een weinig aan den afhellenden Zuidkant. Deze Crater heeft gedurende de laatste jaren dikwijls, en bijzonder in de maand September van 't jaar 1804 hevig gebraakt, en ontzaggelijke hoeveelheden van fijn zand uitgeworpen, die de aanleggende streken tot op een' grooten afstand bedekt heeft. Dit zand met de reeds sedert langen tijd ontbondene Lawa gemengd, is de voornaamste oorzaak der vruchtbaarheid van het Gebergte. Geen enkele steen of rots wordt op de

aan een geschakelde reeks van heuvelen, die den top des Tinggers uitmaakt, gevonden, als eenige groote Basalt- en Lawa- rotsen uitzonderd, die in de groote valleijen, waar de grond door de regens weggespoeld is, en in het bed van eenige Rivieren gevonden worden.

12.—De heuvelen des tops van het Tingger-sche Gebergte zijn grootstendeels met zwaar en groot geboomte begroeid; op de tot den landbouw schoongemaakte streken, worden aanzienlijke hoeveelheden van Europese granen, inzonderheid Tarwe, Rogge en Gierst voortgeteeld. De meeste soorten van moeskruiden, keuken-gewassen en wortelen groeijen weelderig. Met wijnranken heeft men voor dezen eene proeve gedaan, welke veel belovend is uitgevallen; zij groeiden weelderig en leverden menigvuldige vruchten. De Javaansche Berg-bewoners houden zich voornamelijk met de teelt van Ajuin bezig, die aan de afhellende kanten der heuvelen weelderig groeijen, dewelke zij in de Beneden-landen, tegen verscheidene hunner behoeften die hier niet voortkomen, verruilen. Deze zijn voornamelijk Siri-bladen en Rijst, welke laatste echter maar in geringe hoeveelheid, en als een artikel der luxe, gebruikt wordt, want het gewone voedsel der Berg-bewoners bestaat in Turksch koren of Jagon.



13.—De Persik-boomen, die men hier, in de Groente-tuinen geplant heeft, tieren volkomen wel, en derzelver vruchten zijn grooter en smakelijker, dan ikze op andere plaatsen des Eilands gevonden heb. Uit een groot getal planten, welke het Tinggersche Gebergte voortbrengt, en lie maar aan koudere landen eigen zijn, zal ik de volgende hier opnoemen.

1. Eene soort van Eikenboom; (dien ik echter reeds op den Berg Zawoe gevonden maar hier nader te onderzoeken gelegenheid gehad heb) het hout is hard, sterk en deugdzaam; de Bergbewoners kappen het tot planken, welke zij tot het bouwen van hunne huizen bezigen.

2. De *Fragaria vesca* of gemeene aardbezie, met kleine weinig smakelijke vruchten.

3. Verschiedene soorten *Rubus* of Frambozen.

4. Eene soort *Geranium*, eene soort *Cerasium*, *Ranunculus*, *Stachijs*, *Andromeda* en *Vaccinium*.

14—Altemaal planten, die maar in koude gewesten voortkomen, en een verder bewijs opleveren der Analogie dezer Berg-streken met

koude landen, en der vatbaarheid des gronds ter teelt van Europische planten en vruchten.

In de maand Julij 1804 heeft het op dit Gebergte (in de Dessa waar de Tuinier zijne woning heeft) ijs gevrozen ter dikte eenes Dukatons, volgens het getuigenis des Heeren Hesselaaar op Passoeroewang.

15—Maar even deze gesteldheid van lucht en grond, maakt deze Berg-streken volstrekt ongeschikt ter voortteeling der gewone planten van warme landen. Rijst, Pinang, Klappus, Siri, Pisang, en de andere gewone vruchten en planten des Eilands groeijen hier in 't geheel niet; van de Beneden-landen hier komende schijnt men plotseling naar een ander wereld-deel verplaatst te zijn.

16.—Dit gebergte levert vele dier Geneeskundige planten, die ik reeds op andere plaatsen des Eilands gevonden, en van sommige waar van ik voorbeelden aan 't Genootschap gezonden heb: Onder anderen de *Melia*, *Kaioe Soereen*. Het *Ophioxijlon serpentinum* of *Poele Pandak*, en eene eigenaardige soort die hier *Poelean* genoemd wordt.

De *Artemisia Kodo-Motto* (hier *Gandjar* genoemd) eene Javaansche soort van Alsem.

De *Betonica Javensis Tjam-goal* genoemd.

De *Laurus Krangeang*; en eene bijzondere soort van *Laurus*.

De *Chloranthus spiratus* in de Jakatrasche Bovenlanden *Krastoelang*, hier echter *Paloe Dengen* genoemd.

Eene Javaansche soort van *vlier* of *Sambucus*—Benevens vele anderen.

Een in andere deelen des Eilands zeldzaam gewas is de *Ophiorhiza Mungas* (L.) reeds in de Geneeskunde bekend, echter nog weinig onderzocht.

Het *Porono Djievo* der Javanen (waarschijnlijk eene soort *Andira* volgens *Jussieu*) groeit hier meerder dan op andere plaatsen, echter niet menigvuldig.

17.—Meerdere der Javaansche Geneeskundige planten, worden in de lagere streken aan den voet des Bergs gevonden. Deze zoo wel als een naauwkeurig narigt omtrent dit Gebergte, deszelfs bewoners en voortbrenselen, en deszelfs volkaansche Geschiedenis, zal ik in een bijzonder berigt afhandelen.

18.—Eene enkelde waarneming, op mijne Reis gedaan, en die eenig licht op de volkaansche gesteldheid des Bergs verspreidt, zal ik hier

bijvoegen; Langs eenen afgekaptten heuvel deezes bergs bemerkte ik volgende afzonderlijke beddingen (strata) van Delfstoffen.

1te Eene bedding lawa, van de oppervlakte in kleine brokken 6 voet diep; hier op volgt,

2de Eene bedding fijn zwart zand 6 duim.

3de Eene bedding grijs zand, in horizontale strepen 6 duim.

4de Eene bedding zwart zand, 6 duim.

5de Eene bedding gele leemachtige Gewas-aarde 5 voet.

6de Eene bedding lawa in brokken 18 duim.

7de Eene bedding Gewas-aarde 2 voet.

8de Eene bedding grof zand 18 duim.

19.—Na eene, zoo veel de aanhoudende regens van dit jaargetij toelieten, aanzienlijke verzameling van de planten, heesters en boomen van dit Gebergte gemaakt te hebben, keerde ik naar Passoeroewang terug, om dezelve volkomen te droogen en te bewaren, te rangschikken, en meerdere daar van te laten afteekenen; hier mede mij tot den 20 Januarij (A. C.) bezig gehouden hebbende, ging ik wederom naar Soerabaija, waar ik gedurende het overige des Regentijds mijn verblijf hebbe.

20.—Nog neem ik de vrijheid aangaande mijne bezigheden en uitzigten het volgende bijtevoegen:

1. Dat ik sedert mijn laatst Berigt aan 't Genootschap, en gedurende mijne Reizen langs de Solosche Rivier en naar het Tinggersche Gebirgte voortgegaan ben mij ter hoofdzaak te maken, alle, zoo wel van den Inlander gebruikt als door mij bijzonder waargenomene Geneeskundige planten, kennen te leeren, te verzamelen en te onderzoeken; schoon de nadere beproeving, en de bepaling hunner werking, tot mijne terugkomst te Batavia bewaard blijft.

Mijne Lijst van Geneeskundige planten is sedert mijn Berigt van Salatiga met verscheidene nieuwe vermeerderd geworden.

2. Dat ik alle de minder bekende of nieuwe planten, in 't algemeen, heb laten afteekenen, en ook eene redelijk aanzienlijke verzameling van tusschen papier gedroogde planten vervaardig heb.

3. Dat ik eenige der laatste weken, gedurende mijn verblijf op Soerabaija besteed heb, om, in verëeniging met den Heer L'Eschenault de la Tour, die in de Oostersche deelen des Eilands eene verzameling voor den Edelen Heer

Gouv. van Java gemaakt heeft, de door ons beiden op verschillende plaatsen ontdekte Nieuwe *Geslachten* te onderzoeken, te beschrijven, hunne plaats in 't Sijstema te bepalen, en teffens hunne onderscheidende kruidkundige karakteren te laten afteekenen.

4. Dat ik eenige mijner ledige uren bestede om eenig onderzoek te doen, en een kort berigt te verzamelen, aangaande verscheidene onderwerpen, die ook tot het bestek des Genootschaps behooren, namelijk de Javaansche viervoetige dieren, vogelen en insekten; de Mineralogische geschiedenis des Eilands; de taal der inwoneren en de oudheden die op verscheidene plaatsen gevonden worden; schoon ik geenszins beloven kan aangaande deze onderwerpen een volstandig berigt bijeen te brengen.

5. Bedien ik mij van deze gelegenheid om aangaande de twee Leerlingen uit het Marine school van Samarang aantemerkten, dat het getal der afgebeelde planten thans iets over de twee honderd bereikt heeft.—Het zijn meerendeels te voren nog niet in 't licht gegevene onderwerpen, en ik vleije mij dat zij eenstijds, met de door mij daar bij vervaardigde gedroogde voorbeelden, zullen kunnen dienen, om door kunstenaars in Europa naauwkeurige platen te vervaardigen; en

naardien het werk nu meerdere uitgebreidheid en belang verkrijgt, zoo heb ik dienstig geacht om bij tijds aan 't Genootschap kennis te geven, dat het, niet alleen ter voorzetting des werks, maar ook ter voltooiing meerderer onderwerpen, die gedurende eene Reis niet hebben kunnen volkomen afgewerkt worden, noodzakelijk wezen zal, om de leerlingen of den meest bekwamen derzelve, tot het werk in dienst aantehouden. Ik zal hier omtrent echter, bij mijne terugkomst naar Samarang, de noodige informatie aan 't Genootschap zenden, met verzoek aan Geëerde Heeren Dirigerende Leden, om het vereischte bij de Hooge Regering te behartigen.

Aan den oudsten der jongelingen heb ik eene kleine toelage van Rijdsdaalders 5 maandelijks verstrekt, hopende dat Geëerde Heeren Dirigerende Leden dit zullen goedkeuren, dewijl hij, nog niet Kadet zijnde, zonder het zelve geene inkomsten heeft. De jongere is tot nog toe van zijne nabestaanden op Samarang met het noodige voorzien geworden.

21.—Mijn voorhebben is thans, zoo dra de regens ophouden, of ten verste den 10den April, mijne Reis voortzetten, en door de Oostersche Regentschappen des Oosthoeks, naar Banjoe-

wangie voorttegaan, en vervolgens tegen het einde des goeden Moussons, (omtrent de maand September) naar Samarang en van daar met een naar Batavia terug te keeren.

22. — De kennis geving van mijne verrigtingen van tijd tot tijd, is niet zoo geregeld en stiptelijk als ik wenschte, en als aan Geëerde Heeren Dirigerende Leden zal toeschijnen te behoorren, dewijl hier van echter, niet alleen mijne afgelegene situatie, maar ook voornamelijk de menigvuldige bezigheden, welke mijne nasporingen mij gedurig verschaffen, de oorzaak is, zoo hoop, ik dat G. H. D. L. dit zullen gelieven te verschoonen. Mijne ernstige poging blijft, om bij mijne wederkomst op Batavia, derzelver goedkeurig weg te dragen.

23. — Ik beveel mij in Geëerde Heeren Dirigerende Leden verdere genegene gezindheid, en heb de eer mij met zuiverste hoog achting te teekenen,

Wel Edele-Zeer Geachte Heeren!

Uw- Wel Edelens

Gehoorzame Dienaar

THOMAS HORSFIELD.

SOERABAIJA,  
Maart den 31sten  
1806.



# **R E I S**

**NAAR DE OOSTER-STREKEN**

**VAN**

**J A V A.**

---

*Aan de Wel Edele Heeren, Dirigerende Leden  
van het Bataviaasch Genootschap.*

**WEL EDELE ZEER GEACHTE HEEREN!**

1. **I**N myn laatste Berigt, van den 31ste Maart 1. l. meldde ik aan Geächte Heeren Dirigerende Leden, het Plan tot mijne verdere verrigtingen, in Java's Oosthoek. In gevolge deszelve, begaf ik mij, na het ophouden der Regens in het midden der maand April, van Sourabaija over Passoeroewang, naar Banger, om het onderzoek der Oostersche Regentschappen te beginnen. Na de noodige nasporingen in den omtrek van Bessoe, de verblijfplaats des Opzieners der Bangersche Houtbosschen, vertrok ik naar La Madjang, welk Regentschap ik gedurende de maand Mei, in verscheidene rigtingen doorkruiste.

2. La Madjang is althans, behalve in den onmiddellijken omtrek der Hoofdplaats, weinig bebouwd, en zeer uitgebreide streken zijn geheel met woud bedekt: het wordt in 't Noorden door Banger, in 't Oosten door Poegar, en in 't Zuiden door de Zee begrenst; de berg Smeero scheidt het in 't Westen van Malang af.

3. Deze Berg door de Javanen *Smeero*, door de Maleijers *Mahameero* genoemd, is veelligt de grootste van het Eiland Java, deszelfs zuidelijke voet strekt zich tot aan den Zee-kant uit, en in 't Noorden vereenigt hij zich met het Teng-gersche Gebergte; hij heeft eene kegelvormige gedaante, en is even als de voornaamste Bergen des Eilands, een volkaan. De Landstreken die deszelfs voet omringen, zijn meerendeels zacht afhellend, en rijkelijk van Rivieren en Beken doorsneden; de grond bestaat uit eene zwarte vruchtbare tuin-aarde, en is tot de teelt van alle Javaansche Voortbrengselen, voortreffelijk geschikt. De midden Gewesten hebben dezelfde gesteldheid als het Teng-gersche Gebergte, en leveren dezelfde gewassen op. De top des Bergs is kaal en van alle gewassen ontbloot, naardien hij zich boven de lijn van begroeibaarheid verheft; echter even min als alle andere Bergen des Eilands, ooit met sneeuw bedekt. In twee ex-

cursien naar dit Gebergte, had ik gelegenheid deszelfs voortbrengselen te leeren kennen en gedeeltelijk te verzamelen.

4. Eene andere excursie was naar het Zuiden gerigt. De streek van La Madjang naar het Zuider Zee-strand is volkomen effen, en de toegang gemakkelijker, dan op de meeste andere plaatsen. De keten der Zuider strand-gebergten is hier afgebroken; maar verheft zich weêr in 't Zuidwesten van La Madjang, en strekt zich vervolgens tot naar de Mattaram uit.

5. Na bij de noordelijke grens van La Madjang, is in het Regentschap Banger de Berg La Mongan gelegen, een volkaan, die na een stilstand van bijna zeven jaren, verleden maand April weer begon te rooken en uit te werpen. Gedurende mijn verblijf in den omtrek van La Madjang ontlastte hij bij vlagen, na tusschenpoozingen van tien tot vijftien minuten, eene ontzaggelijk groote, lijnrecht opstijgende hoeveelheid van rook; en des nachts was deszelfs kruin van eenen gloeienden kring omringd, waaruit men van tijd tot tijd vuur zag oprijzen. De ontlastingen waren van een hevig donderend gedruisch vergezeld, waarvan de aarde trilde; in 't begin echter waren dezelve, volgens berigt des Posthouders op La Madjang, veel heviger, en

eene hoeveelheid zand werd door iedere ontlasting uitgeploft, welk op ver afgelegene plaatsen nederviel.

6. In 't begin der maand Junij, ging ik naar Poegar, door de uitgestrekte vlakke, die van den voet der Lamongansche en Ijangsche Gebergten, tot aan het Zuider Zee-strand reikt. Dit uitgestrekt Regentschap wordt in 't westen door La Madjang, in 't zuiden door de Zee, in 't oosten door Blambangan en in 't noorden door Banger, Bisoekei en Panaroekan begrenst, het wordt ook het westersche Blambangan genoemd, en heeft voor dezen, even als het oostersche, onder de Vorsten van Bali gestaan. De Hoofdplaats ligt aan 't Zuider-strand in eene lage ongezonde streek; afgaande en gal-koortsen heerschen hier het geheele jaar; velen der Ingezeten worden daar door weg gesleept, en de meeste hier aankomende vreemdelingen worden 'er van behebt.

7. Van Poegar maakte ik eene excursie naar het oosten tot aan de Dessa Sabran, niet ver van de grens van Blambangan gelegen, van waar ik het Zuider-strand bij Batoe-oeloe bezocht; vervolgens nam ik mijnen weg weer noordelijk, door uitgestrekte wouden, naar Djimber. Hier is voor omtrent dertig jaren, weldra na de ver-

overing dezer Gewesten, eene sterkte en bezetting der Maatschappij geweest. De omleggende streck is fraai en vruchtbaar, en wordt in 't westen door het Ijangsche Gebergte, en in 't oosten door den Berg Raauwong beperkt. Deze laatste maakt de grens-scheiding tusschen Poegar en Blambangan, en is een ontzaggelijk groot, van 't zuiden naar 't noorden, bijna door het geheele Eiland voortlopend Gebergte, maar woest, onbekend, en volgens berigt der Ingezeten en alhier, nog nooit door een' mensch bezocht.

8. In den omtrek van Djimber en naar den voet van het Ijangsche Gebergte, heerschen op sommige plaatsen onder de Ingezeten en, *Kropgezwollen* of Goetre: ook heb ik op myne reis naar den Smeero, en vervolgens op den Teng-ger dezelfde ziekte ontmoet, en eenige bemerkingen daar omtrent verzameld. Men is echter hier, even zoo weinig als in Europa en elders, in staat, om de oorzaak van deze de menschelyke gestalte zoo zeer ontstellende ziekte aantetoonen. Zij is niet algemeen, maar tot *zekere streken* bepaald. In een dorp zullen alle de Ingezeten en er mede behebt zijn, daar zij op geen' grooten afstand, in het geheel niet gevonden wordt; gewonelyk wordt deeze ziekte, door de Inwoners aan het water toegeschreven, en zij

toonen verscheidene Rivieren aan, die ze als zeer kwaadaardig in het veroorzaken van Kropgezwollen beschouwen.

In de lucht kan men hier de reden daarvan niet zoeken, want door eene verhuizing van minder dan een kwartier uurs, naar eene plaats op dezelfde hoogte, en in dezelfde luchtstreek gelegen, hebben geheele Dorpen derzelve oorzaak ontweken.

9. Van Djimber ging ik naar Bondo-wosso, eene der Hoofdplaatsen van het Regentschap Poegar, nabij de grens van Bisoeki en Panaroekan, in eene uitgebreide vlakte, tusschen de bovengenoemde bergen gelegen. De bevolking dezer, voor korten tijd, bijna woeste streek, groeit jaarlijks door emigrerende Maduresen aan; de Landbouw vordert, en de uitgestrekte wouden worden meer en meer in Plantagien, Rijstvelden en Dorpen veranderd. Op den weg van Bondo-wosso over Pradjegan (den Oostelijksten Dessa van dit Regentschap, nabij de grens van Blambangan) naar Panaroekan, passeert men de uitlopende heuvelen des Bergs *Ring-git*, die voor meer dan twee honderd jaren, (volgens *Valentijn*) na hevig gebrand te hebben, ingestort is; waar door eene menigte van menschen en dorpen mede verslonden zijn. Deze uitlopende

heuvelen bestaan uit Lawa; en de, na het instorten geblevene, kloof, is nog duidelijk te ontwaren, schoon de berg reeds lang te branden opgehouden heeft.

10. In het begin der maand Julij ondernam ik de reis van Panaroekan naar Blambangan. Het eerste gedeelte des wegs, omtrent drie uren oostelijk van Panaroekan, tot aan de Rivier Landangan, gaat door de bebouwde en tot Rijstvelden aangelegde streken van dit Regentschap heen: hier neemt de weg eene rigting naar het noorder strand, het welk eenigen tijd gevolgd hebbende, dezelve weêr zuidelijk voortgaat, door eene boschachtige en met maar weinig Dorpen bezette streek, tot aan de Rivier Kali-tikoes, die Panaroekan van Blambangan afscheidt. Hier gaat men een woud binnen, dat onafgebroken aanhoudt tot naar Sombar-waroe, een klein dorpje, uit weinig huisgezinnen bestaande, dat tot verblijf der Reizigers dient. Omtrent het midden des wegs van Panaroekan, passeert men de bekende Rivier Kali-poeti, wier water in den droogen tijd wit of melkachtig, in den Regen-Mousson helder en doorschijnend is: in het eerst genoemde tijdperk is het redelijk zuiver van smaak, en kan zonder nadeel gedronken worden; maar wanneer het in den Regentijd

helder en doorschijnend is, heeft het eenen wrangen zamentrekkenden smaak, en is der gezondheid nadeelig. Deze Rivier komt uit den crater van het in het zuiden gelegene Idjengsche Gebergte; in den droogen tijd derzelver water gering in hoeveelheid zijnde, wordt het door de, gedurende deszelfs loop, 'er bijkomende verschillende wateren, in aardstoffen ontbonden; de daarin bevatte Aluin-aarde, wordt door de in de lage landen menigvuldigere Kalkaarde, als een wit neêrplof sel afgescheiden, welke (laatste) zich vervolgens met het zwavel zuur vereenigt. In den Regentijd het water in grooter hoeveelheid van den crater uitstroomend, behoudt het meêr deszelfs eigenaardige gesteldheid; en het daarin zich onthoudende overtollige (superabundans) zwavel-zuur, de bijkomende aard-deelen oplossende, blijft het helder en doorschijnend; uitgedampt zijnde levert het-zelve eene hoeveelheid Aluin met onverzadigd zwavel-zuur.

11. Tusschen Sombar-waroe en Badjoelmatti is eene woeste streek naauwlijks van een riviertje doorsneden, en met steenen en rotsen bedekt: de afstand is omtrent negen uren, in welke men geen spoor eens menschelijken verblijfs, of van eenige bebouwing, ontmoet.



Badjoel-matti dient insgelijks tot eene Rustplaats der Reizigers: van hier heeft men nog tien uren naar Banjoe-wangie de Hoofdplaats des Regentschaps Blambangan, alwaar de Commandant en de overige tot deze volkplanting behoorige Dienaren hun verblijf hebben.

12. Na eenen togt van meer dan twintig uren, door eene bijna anafgebroken Woestijn, wordt men bij het naderen dezer Hoofdplaats, op het aangenaamste verrascht; dezelve is aan het uiteinde des Eilands, langs deszelfs Oostersch strand, in een Landschap gelegen, van het eerst gepasseerde zeer afstekend. Van het groote Idjengsche Gebergte, zacht naar Zee-strand afhellend, met eene fleurige bosschaadje begroeid, en menigvuldig van water-rijke Rivieren doorsneden, bezit de streek een voordeel van ligging en de grond eene vruchtbaarheid, die in geen gedeelte des Eilands overtroffen, in weinige geëvenaard wordt. Behalve dit dienen de omliggende onderwerpen, om de situatie in allen opzigt te verfraaijen. Het Idjengsche Gebergte, verheft zich met verscheiden grootsche toppen, in het Westen dezer Hoofdplaats, en in het Oosten vertoont zich, achter eene fraaije Zeeëngte een groot gedeelte van het Westelijke uiteinde des Ei-

lands Balij In den onmiddellijken omtrek dezer Hoofdplaats, heeft men eene aanzienlijke uitgestrektheid grond gezuiverd, en tot de benoodigde kultuur van Rijst, en de teelt van verscheidene Producten, gereed gemaakt, het overige gedeelte van Blambangan is grootstendeels met woud en bosschaadje bedekt, in welke echter menigvuldige, schoon kleine neêrlatingen aangelegd zyn. Byzonders ontmoet men, langs den weg naar de voormalige Residentie by de Bogt van Oeloepampang, en in den omtrek der aloude Hoofdplaats van dit Regentschap, Koetta Blambangan genaamd, menigvuldige Dorpen.

13. In dit tot mijne nasporingen voordeelig gelegen Landschap, besteedde ik de maanden Julij en Augustus ter voortzetting derzelve: behalve vele excursien, door de toegankelijke gewesten, der ommestrecken der Hoofdplaats, in alle rigtingen, heb ik eene naar het Idjengsche Gebergte, en den daarop gelegen volkaanschen Crater, ondernomen; en eene andere over Matjan-poeti, Banjoe alit en de oude Koetta Blambangan, naar de voormalige Hoofdplaats en sterkte van dit Regentschap Oeloepampang, gedaan; en van daar den Berg Soemboeloengan, ook Goenoeng Ikan genoemd, bezocht. En ik kan met waarheid betuigen, dat geen deel van Java, mij

in hetzelfde tijdperk, eenen zoo rijkelijken oogst verschaft heeft; waarvan ik in mijne verzameling van gedroogde Planten, en de op Banjoe-wangie vervaardigde afbeeldingen, de bewijzen aan 't Genootschap hoop te zullen kunnen aanbieden.

De uitgestrekte wouden van Blambangan bevatten vele Boomen, Heesters en Planten, die in andere Gewesten des Eilands maar zelden gevonden worden; sommige schijnen aan 't Oostersche uiteinde van Java eigen te zijn; andere zijn door den gevorderden graad van bebouwing, en door het uitroeijen der bosschen, in de Westelijke Deelen vernietigd of verminderd. De meeste op andere Plaatsen gevondene Geneeskundige Planten, worden ook hier ontmoet; behalve eenige weinige, die alleen in dit Regentschap voortgebracht worden.

14. Gedurende mijne verschillende excursiën, ben ik in de gelegenheid geweest den beruchten Javaanschen of Makassaarschen Giftboom, gewoonlijk *Pohon Oepas* genoemd, (wiens fabelachtige Beschrijving door Foersch, in een der Deelen van 't Bataviaasch Genootschap uitgegeven, wederlegd is,) in deszelfs geboorte plaats te ontmoeten; en met het, door de Blambangansche Javanen, uit het sap dezès Booms, kunstig geprepareerd Gift, verscheiden proeven

te doen, en de ware eigenschap en werking dezer schadelijke zelfstandigheid, waar van men tot nog toe, niet alleen in Europa, maar ook in deze Gewesten, verkeerde denkbeelden en berigten gehad heeft, kennen te leeren, te onderzoeken en vele Daadzaken en Bemerkingen, tot eene naauwkeurige opheldering, te verzamelen. Deze Boom wordt hier *Antjar* genoemd. Van een ander klimmend heestergewas, dat *Tjittik* heet, wordt door de Javanen dezes Landschaps eene nog veel schadelijker en gevaarlijker Giftstofte bereid, wier uitwerking op het dierlijk ligchaam, die der vergiftigste slangen te boven gaat.

15. Daar ik echter aangaande de onderwerpen der Kruidkunde in 't algemeen en der Geneeskundige Planten bijzonder, zoo wel als aangaande alle onderwerpen mijner oplettendheid en nasporing, bij het voleindigen mijner Reis, een mogelijkst naauwkeurig Berigt opmaken zal, zoo zal ik thans daaromtrent niet verder uitwiden. Ik heb alleenlijk een kort uitzigt van de Gesteldheid, der gedurende de laatste maanden bezochte Landschappen des Oosthoeks getracht te geven; naardien verscheidene tot mijne nasporingen voordeelig geweest zijn, en mijne aandacht lang aangetrokken hebben.

16. Het onderzoek der voornaamste Gebergten, heb ik onafgebroken voortgezet: die gene die in den Oosthoek de groot Midden-keten van Java voortzetten, zijn volgende: De Berg *Redjoeno*, tusschen, en gedeeltelijk in de Regentschappen, Passoeroewang, Malang en Djapan gelegen; de Berg *Kawy*, in 't Zuiden van den laatsten tusschen Malang, Seringat en Kadiri; de *Smeero* en *Teng-ger* tusschen Malang en La Madjang; de Berg *La Mongan* in Banger; de Berg *Tjang*, tusschen Banger en Poegar; de Berg *Reng-git* in Panaroekan; de Berg *Raauwong* tusschen Poegar en Blambangan; en eindelijk het *Idjengsche* Gebergte, aan 't verste Oostelijke einde van Java, uit verscheiden afzonderlijke toppen bestaande.

17. In 't begin der maand September, mij ter terug-reis schikkende, werd ik van de eigenaardige Endemische koorts, der ommestreken van Banjoe-Wangie aangegrepen, die mij na eenen allerhevigsten aanval, van alle krachten en werkzaamheid beroofde. Eerst in 't begin van October was ik instaat, om naar Passoeroewang terug te keeren, alwaar mij de gevolgen der ziekte, eene slepende koorts en verharding der milt (of Koek) tot in 't midden van November bij bleven.

18. Sedert mijn herstel heb ik in 't begin der maand December, weder eene reis naar 't Tenggersche Gebergte, (waarvan ik in mijn laatst Berigt eene korte schets aan 't Genootschap gegeven heb) gedaan; en van de daar groeiende Geneeskundige Planten, eene verzameling tot proeven en aanwending op Batavia, gemaakt; ook heb ik ten gelijken einde, de Geneeskundige Planten der ommestrecken van Passoeroewang verzameld.

In 't begin der maand Januarij (A. C.) heb ik het Regentschap Malang, en de omliggende Gewesten, bezocht; waarop ik den derden Februarij naar Soerabaija terug gekeerd ben.

19. Alhier ben ik thans bezig om verscheiden onvoleindigde onderwerpen, een weinig in orde te stellen: ook vereischt het nazien en bewaren der gedurende mijne Reis verzamelde Medicijnen, Gedroogde Planten en Dieren, die in dit klimaat aan schielijk bederf onderhevig zijn, eene aanhoudende oplettendheid, om dezelve in een' goeden staat van bewaring over te brengen. Vele gedurende mijne Reis met potlood geteekende Planten, laat ik thans met Chineschen inkt uitwerken. Het algemeen Getal der Teekeningen is sedert mijn laatst Berigt met eene groote Centurie vermeerderd geworpen.

20. Ik heb alleenlijk bij te voegen, dat het mijn voornemen is, ten eerste, na het veranderen der Mousson, de terugreis aantenemen; eene goede scheeps gelegenheid zoude tot overbrenging mijner verzameling het voordeeligste wezen, maar dewijl ik daar omtrent thans niet met zekerheid bepalen kan, zoo zal ik naar tijdsomstandigheden, in de aanstaande maand April of Mei, over land of over zee, te rug keeren.

Ten besluit beveel ik mij zeer ernstig in de voortdurende genegenheid van Geachte Heeren, Dirigerende Leden van het Bataviaasch Genootschap, en teeken mij met gevoelens van ware hoog-achting.

WEL EDELE ZEER GEACHTE HEEREN!

*Uw Wel Edelens,*

*Gehoorzame Dienaar.*

THOMAS HORSFIELD,

SOERABAIJA,  
den 28ste Feb. }  
1807.





V.

---

BEKNOPTE BESCHRYVING  
VAN HET  
*CRINUM ASIATICUM.*

DOOR  
TH. HORSFIELD, MED. DOCT.

---

*Beknopte Genees- en Scheikundige Beschrijving  
van het Crinum asiaticum Linnaei, of  
het Bakoeng der Inlanders, zoowel der  
Javanen als der Maleijers.*

DEZE soort wordt van de andere soorten dezes Geslachts onderscheiden, door Bladen die in het midden gekield zijn, Linnaeus beschrijft ze als *Crinum „foliis carinatis”*. Spec. Plant. p. 419. Rumphius noemt ze *Radix toxicaria*, Herb. amb. 61 & 69. Het geslacht behoort, volgens Botanische verwantschap, onder de *Spathaceae* (Bloemsteng-dragende) welke klasse eenige andere werkzame planten bevat.

Reeds in myn berigt van December 1812, merkte ik de braking-makende eigenschap van dit Geslacht in 't algemeen aan; sedert, heb ik op deze soort (het *asiaticum*) bijzonderlijk ge-

let; en de verzamelde narigten bevatten volgende hoofdstukken.

1. Eenige zelfsgemaakte proeven, die de werking dezer wortel, bijzonderlijk op de *Maag*, aantoonen.

2. Eene korte *Scheikundige ontleding*;

3. Eenige *aanhalingen* van Rumphius, aangaande derzelver werking en gebruik.

I.—Proeven, toonende de werking van 't *Crinum asiaticum*.

§ 1. Ik bereidde een aftreksel van eene once van den bolächtigen wortel, met zes oncen gewonen wijn-azijn; den zevenden Julij, des morgens om negen uren, na twee uren te voren een ligt ontbijt van koffij met beschuit gebruikt te hebben, nam ik *twee drachmen* van dit aftreksel: vijf minuten daarna, had ik sterke oprispingen van lucht uit de maag, in vijftien minuten voelde ik mij zeer walgelijk, en terstond volgde een hevig braken waardoor de maag geheel uitgeleegd werd: het walgelijk gevoel duurde nog een half uur, waarop een andermalig braken volgde, waardoor slechts het gedronken water opgebracht werd.—Na verloop van eenige uren, had zich de onäangename aandoening in de maag verloren. (Het is aantemerkten, dat

deze uitlediging der maag zoo volkomen geweest is, als ik ze ooit van een braak-middel gehad heb, en dat de onaangename gevoelens minder schenen, dan die, welke de werking der Antimoniaal middelen verzellen )

§ 2. Door deze vooräfgaande proeve, van het braakvermogen dezer wortel zoo wel, als van de onnadeelige werking derzelve overtuigd zijnde, werd de proeve op een sterker subject, en in grootere hoeveelheid herhaald.—Na de gift eener halve once volgde sterke walging, en na vermeerdering der gift tot eene once, herhaaldelijk braken; en binnen den tijd van zes uren, volgden drie ontlastingen des baiks. In drie andere gevallen, werd door eene once dezes azijns, in verdeelde giften braken verwekt.

*Aann:* De azijn ontbindt de werkzame deelen dezer wortel mogelijk beter dan eenig ander vocht; het extract, en zelfs de versche wortel werken niet zoo oogenblikkelijk, schoon het kaauwen der wortel en het inzwelgen des saps (als door Rumphius beneden getoond wordt) krachtige uitledigende gevolgen heeft.

## II.—Beknopte scheikundige ontleding.

1. Twee oncen der wortel van het Crinum asiaticum werden in eenen kolf der destillatie blootgesteld; het overgehaalde water toonde geene vlugge deelen, was volkomen doorschijnend,

en van gewoon gedestilleerd water niet onderscheiden.

2. Het overblijfsel in den kolf, was van bruinachtig roode kleur; het werd by herhaling met gedestilleerd water uitgekookt, en de gemengde afkooksels tot een extract uitgewasemd, welk zeven drachmen woog: dit extract was kleverig van zelfstandigheid, van bruinachtige kleur, en van bitterachtigen, walgelijken (doch niet zeer sterken) smaak (De bijzondere uitwerking en gift daar van, zijn nog te beproeven.)

De gedroogde uitgetrokkene wortel woog zeven drachmen. (Het verlies van twee drachmen in deze bewerkingen, is aan het uitgewasemde, in de nog niet volkomen gedroogde wortel bevatte, water, toetschrijven.)

3. Het gedroogde overblijfsel der wortel (wegend zeven drachmen) werd met twaalf oncen alcohol overgoten; welk echter zoo wel door de kleur als door den smaak geene verdere oplosselijke deelen aantoonde, het scheen als had het water alle opneembare deelen aangetrokken.

*Aunm:* De beste Pharmaceutische Bereiding is het aftreksel met azijn, waartoe een zesde gedeelte der hoeveelheid, gewone wijngeest kan gevoegd worden, om het schimmelen der slijmige vloeistof te beletten.

III.—Van het zeer wijdloopige, met vele Historische en Plaatselijke aanmerkingen vermengde narigt van Rumphius, is het volgende het voornaamste :

1. “ Dat, deze wortel, krachtig is om sterke braking te maken, zonder hitte of scherpheid, maar alleen met eene walgelijke, doch niet groote bitterheid.”

2. “ Dat zij de edele eigenschap heeft, om het ingenomen venijn met geweld uit den lijve te jagen, en op de wonden gelegd, het zelve daar uit te zuigen.”

3. “ Dat het ingezwolgen sap der gekaauwde wortel een krachtig middel geweest is (in den vijfden Amboinschen Oorlog, van 't jaar 1651.) om die genen, welke door de pijlen der Makassaren, die met een bijzonder gift (der *Arbor toxicaria* Rumphii) waren aan gestreken en onder de Soldaten veel onheil aanrigteden, gekwetst geworden waren, van de verderfelijke gevolgen derzelven te bevrijden en te genezen. “ Op het kaauwen volgt dadelijk een sterk braken, zweeten en arbeiden, waar door het venijn uitgedreven wordt, en zoo de zware duizeligheid of draaijinge in 't hoofd continueert, zoo moet men dat werk hervatten &c.”

4. "Tegens de beten van Duizendbeenen en steken van Schorpioenen, als ook tegens gezwollen Buiken wordt de sap ingezwolgen, en de gekneusde wortel van buiten, op de zieke deelen gelegd."

"*Rumphii* Herb : Amb : XI. Boek XLV.  
Hoofdstuk, art : *Radix toxicaria*."

## VI.

---

### BESCHRYVING

VAN DEN

### G A T I P - B O O M,

DOOR

THOMAS HORSFIELD, MED. DR.

---

**H**ET Geslacht van dezen Boom werd door *Forster* eerst beschreven; *Char: Gen: 33:* hetzelfde is ook bevat onder de nieuwe Geslachten, door *Thunberg* waargenomen, *Thunb: nov: Gen: 45.* De kenmerken worden in het Sijstema naturae bepaald: *Cal. 2 filus. Cor. infundibuliformis Stamina seriè duplici. Drupa 1 sperma.*

De uitvoerige beschrijving van het Geslacht, zoo als ik hetzelfde te Batavia waargenomen heb, is, als volgt:

*Calix*—*Perianthium* monopetalum, bifidum, coloratum; *laciniarum* margo subseariosus.

*Corolla* monopetala infundibuliformis, tubus brevis (longitudine calicis) quinquifidus: *Laciniae*, liniares, longae, reflexae, aut subcontortae.

*Stamina*—Filamenta decem quorum quinque longiora, quinque reliqua brevissima. (saepius sunt octo, quorum quatuor longiora, interdum, numero indefinito (a 5—7) et longitudine irregulari.)

*Antherae* erectiuseulae, didijmae.

*Pistillum* Germen superum, erectum, oblongum hirsutum: stijlus nullus; stigma acutum, sub-incurvum, (pilosum).

*Pericarpium*—Drupa compresso-emarginata (aut reniformis) coriacea, sicca, monocularis.

*Semen*—Nux, (forma drupae) superficie striata.

De *Kelk*—een eenbladig bloemvlies, in tweeën gedeeld, geleverd; de rand der lapjens droogachtig.

De *Bloemkroon* eenbladig trechtervormig; de Buis kort (van de lengte des kelks) in vijven gedeeld: de Insnijdingen lijnvormig, lang, teruggekromd, of een weinig gedraaid.

De *Helmstijltjes*—tien *Meeldraadjes*, waarvan vijf langer, de anderen vijf zeer kort zijn. (Dikwijls zijn er acht, waarvan vier langer, somtijds is het getal onbestemd (van 5—7) en van ongeregelde lengte.)



De *Meelknopjes* bijna regtöpstaande, dubbeld.

De *Stijl*—het *Vruchtbeginsel* boven, regtöpstaande langwerpig, harig; het *Stampertje* ontbreekt; het *merk* spits, een weinig gekromd, (harig.)

Het *Zaadhuisje*—eene pruimvrucht, platachtig uitgerand (of nierenvormig) leêrâchtig, droog met ééne holligheid.

Het *Zaad*—eene noot, van gedaante als het zaadhuisje, de oppervlakte gestreept.

Forster noemt dezen boom „*Inocarpus edulis* en beschrijft hem dus: een hooge boom op de Zuid-zee-Eilanden; de vrucht is eene nierenvormige, zamengedrukte noot, zij wordt van de Eilanders geroost, gegeten: De Europeanen aten ze als kastanjen, maar vonden ze minder aangenaam van smaak, en voor eenen zwakken maag, uit hoofde der harde weinig meelige zelfstandigheid, niet zeer verteerbaar.” (Uit het Hoogduitsch van G. Forster.) De O-taheitsche naam der vrucht is *Ratta*, welke met *Gatte*, (zoo als deze boom hier ook genoemd wordt) van denzelfden oorsprong kan afgeleid worden.

Ook door Rumphius wordt een boom onder den naam *Gajanus* beschreven, die tot dit ge-

slacht behoort, en wiens vruchten en schors met die van onzen Gatip-boom in eigenschappen overeenkomen. De Afbeelding in het Amboinsche Kruidboek verschilt een weinig in de gedaante der bladen, en in de trossen die de bloemen en vruchten ondersteunen; de bevruchtingsdeelen zijn niet kenbaar beschreyen en voorgesteld.

In de Oostersche deelen van Java wordt deze boom ook *Gajang* genoemd.

*Beschrijving des Booms.*

De stam des *Gatip-booms* is regt öpstaande, meerendeels tien of twaalf voeten hoog, van buiten onëffen, knobbelig of rend-hoekig-gegroeft: hij schijnt in 't gemeen uit meerdere verscheidene stammen opgemaakt te zijn, die te zamengedrukt oprijzen. De wortelen loopen van den stam ( en deszelfs hoeken ) schuins in de aarde; somtijds worden zij nog eenige voeten met dezelve parallel loopende gezien.

De schors der jonge boomen is witachtig graauw, die der oude donker-kleurig en meer of min gegroeft: dezelve is van een rood kleverig zamentrekkend sap doordrongen, 't geen na insnijdingen 'er uit vloeit, en zich in glinsterende druppels aanzet. In de gedroogde schors toont

dit gomächtig sap zich aan het afgebrokene of gesnedene einde; hetzelve wordt in verscheidene boomen in verscheidene hoeveelheid verkregen.— Na de Regentijd vloeit hetzelve het menigvuldigst: het is in water oploselijk en deelt aan hetzelve eene verzadigde roode kleur mede.— (Deszelfs hoedanigheden als een zamentrekkend Geneesmiddel zullen, na 't verhaal der scheikundige ontleding der schors, aangetoond worden.) De Gatip-boom de hoogte van omtrent 10 of 12 voeten bereikt hebbende, verdeelt zich in eenige weinige sterke takken, die schuins opstijgen, en kleinere iets bogtige takken afzenden, die zich maar weinig verspreiden, en eene kroon vormen, van rondachtig, somtijds van cilindrisch-hoogrijzende gedaante, die van buiten rijkelijk met loof bekleed is.

Aan de jonge rijsjes, die tegen den buitenkring der kroon, lang, dun en afhangend zijn, komen de bladen voort: zij staan overhoeks, hebben eenen korten, dikken, vleesachtigen, iets gedraaiden steel, en zijn op beide zijden glad, beneden tusschen de ribben fijn, nets-wijs geäderd, van dunne leêr-achtige zelfstandigheid, langwerpig-eivormig, aan 't einde stomp afgerond of ongeregeld uitgerond, en de volwassenen, tien tot twaalf duimen lang, en drie tot vier dui-

men breed. Aan de jonge rijstjes, zijn, meerendeels de bladen tegenover de bloem-trossen geplaatst; zeldener komen zij uit de houtachtige deelen der takken of des stams zelve voort: deze trossen hebben eenen gemeenen houtachtigen steel, die in eenige dunne ongeregelde vleeschige takjes verdeeld is, waaraan de kleine, licht-gele, trechtervormige bloemtjes zeer dicht in 't rond geplaatst zijn. (De grooteren dezer trossen zijn 8 tot 10 duimen lang, en bestaan uit vele, dikwijls 20 tot 30 ondergeschikte takjes, die vele honderden van bloemtjes ondersteunen.)

De bloemen hebben eenen sterken, zoeten, zich wijd door de lucht verspreidenden reuk; zij zijn van korten duur, en vierentwintig uren na hare verschijning, al te maal afgevallen, wanneer de voet des booms als besneeuwd is. Zij verschijnen tegen het einde des droogen, en in 't begin des regen-moussons, aan verschillende boomen op verschillende tijden.—Uit het groot getal der bloemen blijft maar hier en daar een enkel vruchtbeginsel hangen, om die, in 't geslacht beschrevene, noot voort te brengen. Deze Noten worden van de Javanen, en de Inlanders in 't gemeen, met graagte gegeten, en gekookt, als eene zeer smakelijke spijs beschreven, zij zijn meelachtig en zoet.

Deze boom wordt, in den omtrek van Batavia, zeer gemeen langs de wegen, en nabij de huizen der Inlanders aangetroffen. Hij vereischt eene vette, zwarte, een weinig vochtige tuin-aarde.— Binnen's lands (in Jakatra en de Preanger-landen ten minste) wordt hij niet gevonden, en waarschijnlijk is hij van elders overgebracht. Hij behoort te huis op de Eilanden der Zuid-Zee (des grooten stillen Oceaans) op de Moluk-kische, en overige ten oosten van Java liggende Eilanden. Het eerste narigt van de krachten en hoedanigheid der schors dezes booms werd mij door den Heer J. Ekenholm, medegedeeld.

En dewijl, bij nader onderzoek, de zamen-trekkende eigenschappen, en het waarschijnlijk-ke nuttig geneeskundig gebruik, zich duidelijk vertoonden, zoo verkoos ik dezelve voor een onderwerp van naauwkeurige scheikundige ontleding.—Na dat het grootste gedeelte der volgende proeven geëindigd was, viel mij toevallig, de boven aangehaalde beschrijving van Professor G. Forster, in handen; ik had het Geslacht te voren als nieuw beschouwd.

#### *Scheikundige Ontleding.*

PROEVE I. Eene halve once der Gatip-schors, werd met twaalf oncen alcohol acht en

veertig uren getrokken, en dikwijls omgeschud: de Tinctuur was van fraaije hoog-roode kleur; het tweede aftreksel was minder geverwd, en het derde zonder kleur. Deze aftreksels gemengd zijnde hadden eenen sterken, niet onaangenamen zamentrekkenden smaak, die zonder alle bitterheid was. In de oplossing des Yzer vitriools maakten eenige druppels eene menigvuldige zwarte neêrploffing. Omtrent zeven-achtste gedeelte des Wijn-geests werd in eenen kleinen kromhals afgehaald, en op het overgeblevene vocht, welk klaar en doorschijnend gebleven was, eenige oncen gedestilleerd water gegoten; 'er zonderden zich de Harsdeelen in fijne schilfertjes af, die gedroogd, vijf en twintig greinen wogen. Deze hars bestaat uit donkerbruine, gekrulde, glinsterende blaadjes: uit het overgeblevene vocht, werden nog vijftien greinen extract-ächtige stof verkregen.—Het overblijfsel woog drie en eene halve drachme.

PROEVE II. Eene once der schors werd bij herhaling met gedestilleerd water uitgekookt. Het eerste afkooksel was donker rood van kleur, en van sterken maar zuiver-zamentrekkenden smaak —In de oplossing des Yzer-vitriools veroorzaakte het eene donkere neêrploffing, die zich in zwartachtige vlokken afscheidde. De over-

blijvende gedroogde schors had aan gewigt eene drachme verloren.

**PROEVE III.** De verscheidene aftreksels (der laatste Proeve) werden gemengd, en in gematigde warmte uitgewasemd; zij leverden eene en eene halve drachme extract, van donker-bruine kleur en korrelige zelfstandigheid, welke met harsächtige glinsterende blaadjes vermengd was.

**PROEVE IV.** Om de nadere bestand-deelen des Extracts daarteleggen, werd deze en de volgende twee proeven daargesteld.

Het door de IIIde Proeve verkregene Extract, wegend eene en eene halve drachme, werd, in gedestilleerd water opgelost zijnde, met vier drachmen salpeter-zuur gekookt. Na dat de, zich menigvuldig ontwikkelende salpeter lucht ophield, wierd de vloeistoffe doorgezijgd en op een' kouden oord neêrgesteld. — De onopgelost terug blijvende stoffe, welke harsachtig was, woog vijftien greinen. In de vloeistoffe zonderden zich, na eenige dagen, gele kristallen af, die de gedaante en eigenschappen des suiker-zuurs bezaten, en aan gewigt bijna eene drachme bedroegen.

**PROEVE V.** Het Extract eener once der schors (eene en eene halve drachme) werd met

eene toereikende hoeveelheid gedestilleerd water opgelost, en zoo veel zeer zuivere Wijngest toegevoegd, als noodig scheen eene afzondering of neêrploffing der zout-deelen te bewerken; de vloeistoffe gefiltreerd zijnde werd gedeeltelijk uitgewasemd; zij had eenen sterken zoutächtingen smaak, maar dewijl de slijmige deelen, de kristallizatie beletteden, zoo werd de volgende proeve gemaakt.

**PROEVE VI.** Eene en eene halve drachme Extract werden in eenen smelt-kroes gedaan, en door een hevig vuur, alle extract-en slijm-deelen verbrand: Het overblijfsel woog twaalf greinen, zorgvuldig met gedestilleerd water uitgeloozd zijnde, bleven vijf greinen onopgelost. De vloeistoffe werd tot het punt der kristallizatie uitgedampt en bijgezet; 'er zonderden zich, na eenige dagen, zes greinen bladerig zout af, welk het vocht des dampkrings aantrok, het blaauwebloemen papier in groen, het curcuma-papier in bruin, en het sapp-an papier in paars veranderde, met verdund salpeter-zuur opbruiste, en verzaadigd zijnde langwerpige kristallen aanzette, die op brandende kolen opploften, en den mond het gevoel van koude verwekten, en alle eigenschappen van salpeter bezaten. Dit bladerige zout, was dus zuiver planten-loozzout.



**PROEVE VII.** Het na de bewerking met wijngeest en water onopgeloste overblijfsel, van twee oncen der schors, welk veertien drachmen woog, werd in eenen smelt-kroes verbrand; de terug blijvende asch woog een en vijftig greinen: met gedestilleerd water uitgeloozd zijnde bleven zes en veertig greinen over. De uitgedampte vloeistoffe leverde eenige greinen planten loog-zout, en omtrent twee greinen eenes zouts in kristallen, welk de vorm en den smaak van Digestief-zout had.

**PROEVE VIII.** De zes en veertig greinen (in de laatste Proeve) van de uitgeloozde asch overblijvend, werden met zes oncen gedestilleerden azijn gekookt. Het door filtrering zorgvuldig afgezonderde, onopgeloste restant, woog gedroogd 20 greinen, en uit de vloeistoffe werden door het vaste planten loog-zout vijf en twintig greinen aarde neêrgeploft, die de eigenschappen eener zuivere kalk-aarde bezat.

**PROEVE IX.** Het aardächtige overblijfsel (na de behandeling met azijn-zuur) werd met verdund zwavelzuur overgoten, en der hitte blootgesteld: na dat de oploselijke deelen uitgetrokken waren, werd het restant afgezonderd: in de met gedestilleerd water verdunde vloeistoffe toonde zich, door het blaauwzure Loogzout

(Prussias Potassae) eene geringe hoeveelheid Yzer, wier gewigt omtrent een half grein bedroeg. Door het planten-loogzout werd de aluin-äarde in fijne vlokjes neêrgeploft, die door het aanwezige ijzer bruinachtig geleverd waren. De onöplosselijke aarde (wegend tien greinen) werd met vast planten-loogzout gemengd, in eenen kleinen kroes in een hevig vuur geglocid, zij vloeide daarmede in eene harde scoria te zamen, en was dus Kiesel-äarde.

De Geneeskundige eigenschappen der schors dezes booms zijn eenvoudig en in 't oog vallend; zij is een zuiver, maar niet krachteloos zamentrekkend middel. De beste wijze om dezelve aantewenden, is in een versch bereid, sterk en volkomen verzadigd afkooksel; dit afkooksel bevat eene slijmige zelfstandigheid, waardoor de zamentrekkende hoedanigheid ondersteund wordt. Het Extract en het Hars, zijn beiden minder aangenaam en werkzaam. In meerdere gevallen van Buik-loop, waar zwakte der vaten der ingewanden, zonder ontsteking (of vermeerderde werking) plaats had, heb ik eene goede nitwerking daarvan waargenomen.

Een verzadigd uittreksel dezer schors, met eene toereikende hoeveelheid der bladen des (elders beschrevenen) Ki-monjenjens, eener soort

**Brucea**, gemengd, levert een werkzaam, bitterzamentrekkend Geneesmiddel.

Door Rumphius wordt aangaande het geneeskundig gebruik des Gatip-booms aangemerkt: „de schors dezes booms, (met die van de Lingoa-boom) in water gekookt, geeft een' goeden drank voor de genen die gaan of vast zijn aan den rooden Buikloop, en wordt dit hulpmiddel in 't Amboinsche Zieken-huis veel gebruikt” Rumph. I. p. 171.

---



# VII.

---

## SCHEIKUNDIGE ONTLEDING

DER VRUCHTEN VAN DEN

## *RARAK-BOOM,*

*SAPINDUS SAPONARIA*, VAN LINNAEUS.

DOOR

THOMAS HORSFIELD, MED. DR.

---

### *Inleiding.*

DE Rarak of Zeep-boom wordt bij Linnaeus *Sapindus Saponaria* genoemd: onder de benaming van *Saponaria* wordt dezelve ook beschreven door Rumphius, door Burman, (in den *Thesaurus Zeijlanicus*) en door van Rheede.

De Kruidkundige Beschrijving, en het nuttige huishoudelijke gebruik der Vruchten dezes booms, zijn algemeen bekend; maar dewijl die, in het zaadhuisje bevatte, eigenaardige zelfstandigheid, die alle hoedanigheden eener volkomen zeep bezit, nog nooit genoegzaam onderzocht

is, of derzelver bestand-deelen daargelegd zijn geworden, zoo werd dezelve, aan de volgende scheikundige ontleding, blootgesteld.

Het Zaadhuisje (de Vrucht) dezes Booms is eene Drupa of Pruim-vrucht van ronde gedaante, wier oppervlakte van buiten een weinig bultig en met zachte verheffingen geschakeerd is, die met eene glanzende opperhuid bedekt zijn: Zij is een weinig grooter dan een gewone musketkogel; en dewijl, volgens het getal der Vruchtbeginsels, des rangs Trigijnia, gewoonlijk drie, (zeldener twee) bij malkander voortgebragt worden, zoo zijn zij, aan het punt der vereeniging, een weinig platachtig of te zamen gedrukt.

Als deze Pruim-vrucht doorgesneden wordt, zoo toont zich de schil als een vleesachtig hul- of deksel, een tiende en somtijds een achtste gedeelte van een' duim in diameter: dit hulsel is ook van binnen met eene gladde, glanzende huid belegd, die een weinig dikker dan de buitenste, horenachtig, en doorschijnend is. Beiden laten zich door maceratie afzonderlijk daarstellen.

Tusschen het binnen-en buitenste bekleedsel der Vrucht, waarvan zich het eene met de opperhuid of "*Epidermis*," het andere met de ware huid of "*cutis vera*" zeer natuurlijk ver-

gelijken laat, bevindt zich een netswijs-slijmig weefsel, een "*Rete mucosum*" waar in de Zeep-*äardige* zelfstandigheid geplaatst is, welke het, onderwerp onzes tegenwoordigen onderzoeks is.

Deeze Zeep*äardige* stoffe is gomachtig, kleverig en doorschijnend; donkergeel van kleur, zoet en suiker*äardig* van reuk, en heeft een sterken, onaangenaamen bitteren, in de keel brandenden smaak: zij bezit eene aantrekkende en vereenigende verwantschap met de tegenovergesteldste zelfstandigheden, verbindt zich met loogzout en zuren, met water, olie en wijn-geest, en in de gemakkelijkheid, vaardigheid en innigheid dezer verbinding, enen*äart* zij de beste zeep. Zij is van eene aanzienlijke hoeveelheid vaste lucht, in eenen gebondenen toestand, doordrongen, die zich zoo dra de vrucht, geheel of in stukken gesneden, met water omgeschud wordt, schielijk ontbindt, en eenen witten schuim in menigte voortbrengt, welke in eigenschap met het zoo genoemde Zeep-sop nauwkeurig overeenkomt, en even als hetzelve, voor het wasschen der handen, het reinigen van linnen en kleeding, en voor verscheiden ander huishoudelijk gebruik, kan aangewend worden.

#### *Scheikundige Ontleding.*

PROEVE I. Twee oncen klein gesneden schillen der Rarak-vrucht werden met een en een half

pond gedestilleerd water overgoten, in een' kolf gedaan, en, na vier en twintig uren geweekt te hebben, vier oncen vloeistoffe overgehaald. Het gedestilleerde water had den bijzonderen zoet-ächtigen reuk der Infusie (welke met den reuk eener vloeistoffe, die begint te gisten, zeer na overeenkomt): in het begin was de scherpe smaak der gomachtige stoffe nog te bespeuren, maar na vier en twintig uren was dezelve zuur-ächtig, zacht en niet onäangenaam.

De in den kolf terug geblevene stoffe, was bruin-rood van kleur, en van zeer sterken, bitteren onaangenaam-brandenden smaak: de oplossing des ijzer vitriools werd daardoor donker groen neêrgeploft.

PROEVE II. Het overblijfsel (na de destillatie der Ite Proeve) werd zoo dikwijls met water uitgekookt, tot hetzelfde zonder kleur en smaak afkwam, welk twaalf herhaalde infusiën vereischte. Deze verscheidene infusiën werden gemengd en in eene zachte warmte tot een extract uitgewasemd, welk eene once en vijf drachmen woog, den eigenäardigen bitteren smaak, en overige eigenschappen der in de sehillen der vruchten bevatte kleverige gomme bezat. Het onoplosselijke restant woog drie en een halve drachme, en bestond slechts uit de (boven beschreven) buiten-en binnenste huid der zaadhuisjes.



**PROEVE III.** Eene once der Vrucht-schillen werd met zestien oncen Alcohol getrokken; deze nam eene hoog-gele kleur aan: afgegoten zijnde, werden door twee versche trekkingen, alle oploselijke deelen opgenomen: De Alcohol werd nu, tot op twee oncen, afgedestilleerd, en eenige oncen water toegevoegd, waardoor zich eenige weinige zeer fijne witte wolken afzonderden, die door filtrering afgezonderd, en gedroogd, 5 greinen wogen.—De afgezonderde stoffe was nog hars nog gom, maar eene taaije, geleiaardige zelfstandigheid, waarvan de hoeveelheid niet toereikend was om dezelve genoegzaam te ontleden. De terugblijvende vloeistoffe was doorschijnend, en leverde, door zachte uitdamping, bijna zes drachmen van een zeer fraai, volkomen doorschijnend licht-geel extract, dat met de in de vruchten bevatte gomachtige stoffe overeenkwam, maar lichter van kleur, en van alle vreemdäardige deelen gezuiverd was. Het gedroogde overblijfsel, bestaande (als in de tweede Proeve) uit de twee schillen der Vrucht, woog twee drachmen en twee scrupels.

**PROEVE IV.** Een volkomen verzadigd waterachtig *Aftreksel* der Rarak-vrucht schillen, van donker gele een weinig bruinachtige kleur, verhielt zich tegen Reagentia op volgende wijze.

1.) Eene drachme (dezes aftreksels) werd met de zelfde hoeveelheid siroop van blaauwe bloemen gemengd, en na eenigen tijd roodachtig bruin.

*Aanm.* In de bereiding der Siroop, der Infusie en des Papiers van *Blaauwe bloemen*, werd voor alle Proeven van dit Berigt, de groote Blaauwe bloeme der *Clitoria Ternatia* Linn: aangewend.—Zij levert een fraai en aandoenlijk toetsmiddel voor Loogzout en zuren.

2.) Eene drachme (des Aftreksels) met eene drachme der Infusie van Blaauwe-bloemen gemengd zijnde, werd eerst blaauw roodachtig, en na eenigen tijd violet.

3.) Op het Curcuma papier, heeft dit Aftreksel geene de minste uitwerking.

*Aanm.* Op dat deze proeven, niet als tegenstrijdend met eenige der volgende, die het aanwezen eener merkelijke hoeveelheid loogzout aantoonen, mogen beschouwd worden, is noodig aantemerkten, dat, in Proeve 1) en 2), de verandering in de kleur der Blaauwe-bloemen, voortgebracht wordt, uit de in de Infusie bevatte *vaste lucht (lucht-zuur)*, die in de andere proeven, door de werking des vuurs uitgedreven wordt. In de 3de Proeve, wordt dat in het Aftreksel bevatte loogzout, door de vaste lucht in onzijdigheid, (Neutralizatie) gehouden. Na dat de Infusie eenige dagen gestaan heeft, is de verandering der Blaauwe-bloemen, uit hoofde der grootere hoeveelheid door gisting ontbondene, vaste lucht, meer schielijk en in 't oog vallend.

4.) Eene halve once (dezes Aftreksels) werd met dezelfde hoeveelheid Alcohol gemengd: 'er ontwikkelden zich eene menigte van luchtblaasjes; de Infusie nam eene meer heldere kleur aan, en eene zeer fijne, vlokkige in de vloeistoffe hangende neêrploffing scheidde zich langzaam af. (Dit neêrplofsel kwam met dat in de derde proeve beschrevene naauwkeurig overeen.)

5.) Als (dit Aftreksel) met gelijke hoeveelheid uitgeperste kalappers of katjang olie vermengd en omgeroerd wordt, zoo verbindt het zich naauwkeurig daarmede tot een wit melkachtig liniment (of smeersel) gelijkend aan het uit gelijke deelen Ammoniakzout-geest en Olijven-olie bereide "Linimentum volatile". Het Extract levert met olie een dik zeepachtig smeersel.

6.) Met de oplossing des ijzer-vitriools gemengd, volgde eene neêrploffing van donker groene kleur, die na eenigen tijd zwartachtig werd.

7.) De oplossing des bijtenden opgehevenen Kwiks, veroorzaakte een fijn, wit, aardachtig neêrplofsel, dat zich zeer langzaam afscheidde; en in de oplossing des suiker-zuurs, eene menigvuldige, witte, melkachtige neêrploffing voortbragt.

8.) In de oplossing des Koper-vitriools volgde eene vlokkige donker graauwe neêrploffing, die in de vloeistoffe drijvende bleef.

9.) De oplossing des zachten en des bijtenden planten loogzouts, verdonkerden de kleur (des Aftrekzels), en na eenige dagen zonderde zich (in beiden) een fijn bruinächtig neêrplofsel af.

10.) Door zwavel, salpeter en azijn zuur, werd de kleur (des Aftrekzels) merkelijk ligter.

De volgende *twee* Proeven werden gemaakt om de bestand-deelen des Extracts daartestellen.

**PROEVE V.** Zes drachmen Extract (omtrent de helft der in de IIde Proeve verkregene hoeveelheid) werd bij herhaling met Alcohol getrokken, tot dezelve niets meer opnam: het onopgeloste, bestond slechts uit eenige in de bereiding bijgemengde schilfertjes der hulle, en woog gedroogd een' scrupel. De Alcohol gedeeltelijk afgetrokken zijnde, werden eenige oncen geditilleerd water toegevoegd, waardoor eenige greinen witte geleiächtige stoffe neêrgeploft werd (zie de IIIde en No. 4 der IVde Proeve). De, zeer heldere vloeistoffe, uitgewasemd zijnde, leverde vijf en eene halve drachme eenes zuiveren, glanzenden, doorschijnenden, donkergelen extracts.

**PROEVE VI.** Zes drachmen Extract (van de IIde Proeve) werd in eenen openen smelt-kroes, aan een hevig vuur blootgesteld, gedurende de verbranding werd eene zeer groote menigte vaste lucht ontbonden.

*Aann.* De mangel eenes Hydro-pneumatischen apparatus, belette mij deze lucht te verzamelen en te ontleiden, om welke reden ik deze proeve in 't vervolg herhalen zal om de bestand-deelen dezer lucht-vormige stoffe nader daar te leggen.

Hierop volgden donkere dampen, van sterken olieächtigen reuk. Na volkomene branding woog de overblijvende asch twaalf greinen.—Zij werd met acht oncen gedestilleerd water wel uitgekookt, waarop vier greinen onopgelost terug bleven. De loog uitgewasemd zijnde, leverde zeven greinen zout in fijne, gele blaadjes, welk het vocht des dampkrings aantrok, en zich tegen Reagentia als een volkomen zuiver planten loog-zout verhiel: met verdund salpeter-zuur gemengd, leverde het fraaije kristallen van salpeter.

**PROEVE VII.** Twee oncen der Vrucht-schillen, werden met twee pond gedestilleerd water overgoten, en door dikwijls herhaalde omroering (met een stok, die van onderen met vier dwars-houten voorzien was, volgens de Garajische wijze) behandeld, tot alle de oploselijke stoffen opgenomen waren, de geleiächtige vloeistoffe

werd nu ter helft, in zeer gematigde warmte uitgedampt, en daarop, in platte schalen tot verdere uitwaseming, in de opene lucht neêrgezet. Na verloop van zes weken, waren de waterächtige deelen uitgewasemd, en een zeer zuiver bruin Extract (in dezelfde menigte als in de IIde Proeve) overgebleven, maar sporen van zout-kristallen toonden zich niet, en de slijmige zelfstandigheid des Extracts, belette de werking des daarin bevatten alcali, aan Curcuma en Blauw-bloemen papier zichtbaar te worden.

PROEVE VIII. Twee drachmen des Extracts (der VIIde Proeve) werden met zes drachmen, met gedestilleerd water verdund salpeter-zuur, overgoten; 'er ontwikkelden zich menigvuldige salpeter dampen, de vloeistoffe nam eene zeer ligt-gele kleur aan, en eene witachtige bladerige naar hars gelijkende zelfstandigheid, scheidde zich af; na geëindigde ontbinding der salpeter lucht, werd de kolf van 't vuur afgenomen, de onopgeloste harsachtige deelen (die eene halve drachme wogen) door filtrering afgezonderd, en de vloeistoffe in eene platte schaal verder uitgewasemd en bijgezet. Na eenige dagen begonnen zich op den bodem der schaal, fraaije, langwerpige, doorschijnende, kristallen aan te zetten, wier hoeveelheid na eenigen tijd, op eene drachme beliep, en die zeer rein *Suiker-zuur* waren.

Het door water en wijngeest uit de Rarak-schillen getrokken Extract was dus ontleed; de vuur bestandige deelen waren nog daartestellen.

PROEVE IX. Twee oncen der schillen werden in eenen openen kroes verbrand; de verkregene asch woog *veertig* greinen. In papier gewikkeld en bijgelegd zijnde, trok zij het vocht des dampkrings zoodanig aan, dat het papier als met water bevochtigd scheen, en zelfs op nabij liggende pakjes het nat overvloeide. Na twee dagen had de asch *vijf* greinen aan gewigt toegenomen: zij werd met twaalf oncen kokend gedestilleerd water zorgvuldig uitgeloofd, uitgewasemd, en *tien* greinen zuiver loogzout in fijne gele kristallen 'er uit gekristalliseerd.

Dewijl in het restant der asch, eenige niet volkomen verteerde deelen bevat waren, (het loogzout had het geweld des vuurs eenigermate verdoofd), zoo werd dezelve nogmaals in eenen gloeienden kroes, aan 't vuur blootgesteld, waarna het overblijvende nog *tien* greinen woog.

PROEVE X. Deze tien greinen (aardachtig overblijfsel) werden eerst met twee oncen gedestilleerden azijn behandeld, en uit de solutie, door het planten-loogzout, *drie* greinen aarde neêrgeploft, die zeer zuivere *Kalkaarde* was, en geen spoor van Bitteraarde toonde. De over-

blijvende 7 greinen werden met verdund aqua regia der hitte blootgesteld, zij leverden *twee* en een *half* grein aluin aarde, en, door het Blaauw-zure loog-zout omtrent *een half* grein Yzer—vier greinen bleven onopgelost te rug, die grootstendeels Kieseläarde waren.

De onmiddellijke *Gevolgtrekkingen* uit de verhaalde proeven zijn :

1.) Dat door de destillatie wel eenige vlugge deelen opgeheven worden, dat echter geene olie in de vrucht-schillen bevat is, *Proeve I*.

2.) Dat zoo wel door Alcohol als door water, *dezelfde hoeveelheid* extractächtige stoffe (welke ruim drie vierde des gewigts der gebruikte schillen bedraagt) verkregen wordt; echter is het geestige Extract het fraaiste, ligtkleurigste en zuiverste, *Proeve II en III*.

3.) De IVde Proeve toont de uitwerking der voornaamste Reagentia op het waterächtige uittreksel, waarvan ik slechts het aanwezen der *vaste lucht* No. 1, en der *Kalkäarde* No. 7, en de *naauwkeurige verbinding met Olie* No. 5, als de merkwaardigsten, aanhale.

(NB. Als een aanhangsel tot deze proeve, heb ik, (het gene ik sedert de voleindiging derzelve ondervond) toetoevoegen, dat ook met water



waarin gewoon zee-zout opgelost is, het gom der schillen, zich gemakkelijk vereenigt, en eene kleverige, reinigende schuim (of zop) in menigte voortbrengt. Deze vruchten kunnen dus den Zee-varenden tot groot nut wezen.)

4.) De werking des vuurs toont de volgende bestanddeelen, in het Extract van eene once der schillen, aan; zes drachmen of 360 greinen Extract bevatten:

349 greinen *Gas of luchtvormige* stoffen, en die wel grootstendeels *vaste lucht* zijn.

7 Greinen zuiver vast *planten-loogzout*,

4 greinen aardächtige deelen, waarvan 1 en  $\frac{1}{3}$  grein reine *kalkäarde* zijn.—Zie ook de Xde Proeve.

5.) De *vuur-bestandige* (vaste) deelen der schillen, worden door de IXde en Xde Proeve, zeer naauwkeurig aangetoond: De overeenkomst tusschen de VIde en deze proeven, is aanmerkelijk; in beide is het aardachtige overblijfsel zeer gering.

Volgens deze ontledende proeven, bestaan deze schillen uit 1.) eene eigenäardige, gomächtige *verbindings stoffe*, 2.) eene aanzienlijke hoeveelheid *Loogzout*, met lucht-zuur overzadigd en 3.) eene geringe hoeveelheid fijne *Kalkäarde*, op

## 14 SCHEIKUNDIGE ONTLEDING

eene zoodanige wijze vereenigd, dat de *menging* dezer verscheidene zelfstandigheden, alle werkingen eener volkomen zuivere *Zeep* voortbrengt.

Meerdere scheikundige gevolgtrekkingen bieden deze proeven nog aan: dewijl ik echter dezelfde nog niet als volbragt beschouwe, en ook een plan tot vervolging derzelve ontworpen heb, zoo zal ik deze tot dien tijd uitstellen, dat ik, tot eigene voldoening, deze ontleding voleindigen kan.



## VIII.



### BERIGT,

VAN EENE MET VASTE-LUCHT BEZWANGERDE

*BRONWEL.*

IN HET REGENTSCAP PARAKAN-MOENTJAN.

DOOR

TH. HORSFIELD, MED. DR.



IN het zuidelijke gedeelte des Regentschaps Parakan-Moentjan, ontspringt eene Bronwel, welker water met veel vaste-lucht bezwangerd is, en waarmede de beneden volgende scheikundige proeven genomen zijn.

De ligging dezer Bron is in eene vlakte, de Golong-gong genaamd; zijnde eene der uitgestrektste vlakten, van het oostelijke gedeelte der Jakatrasche Preänger Landen. De Grens-scheiding van deze vlakte word bepaald, in 't westen, door het Gebergte welk den naam aan deze geheele vlakte geeft, en Goenoeng Golong-gong genaamd wordt, in 't oosten door de Rivier Tji-

Tondoi, van Cheribon; in 't noorden door de voorgebergten des Tampomaas (of grooten Sumadangschen Berg) van het Regentschap Sumadang, en in 't zuiden door de Rivier Tji-woelan, van Soekapoera.

In deze vlakte, omtrent twintig uren bezuiden de Hoofdplaats van Parakan-moentjan, in het district (of tjoetak) Tji-lolohan, is eene Rustplaats (of Passangrahan) Tji-kado genoemd, van waar men in eene zuidwestelijke rigting, op den afstand van een uur, de gemelde Bronwel aantreft; zijnde de naastbijliggende Kampong of Dorp Tji Puweela geheeten. De Bronwel wordt, door de in den omtrek wonende Inlanders, van wegens den zoutachtigen smaak des waters, Soemoer azia of Zoute put genoemd.

De Bron ontspringt uit den top van eenen kleinen heuvel, wiens kanten zacht afhellen, en met struwelen en kleine heesters begroeid zijn; de top echter waar de opwellingen gevonden worden, is vlak en zonder eenige gewassen.

Wanneer men dezelve nadert, ontdekt men eenige groote ongeregeld uitstekende Rotsen, aan wier uiterlijk voorkomen, zoodra men dezelve in 't gezigt heeft, men een aanmerkelijk verschil, van de gewone steensoort der omliggende gewesten waarneemt.

Tot nogtoe heeft men op de heuvelen des Golong-gongs, geene dan ongeregeld in 't rond verspreide Basalt-steenen ontmoet; dan de steensoort op dezen heuvel, is een echte Koraal-steen, en bij nader onderzoek geeft zich derzelver oorspronkelijk Marine ontstaan, door de bekende Zee-gedierten Corallia genoemd, zeer duidelijk te kennen.

De kleur der steenen is van buiten grijs of bruinachtig, de oppervlakte onëffen, op sommige plaatsen gestreept, op andere slekkenvormig geëderd, en door de vallende regendruppelen, is de geheele oppervlakte met ongeregelde uithollingen bedekt: gebroken zijnde, toont zich nog duidelijker de Koraalachtige oorsprong; bestaande de gcheele steen uit een weefsel van cellen en pijpen, die zich ongeregeld doorkruisen, en door dunne beddingen van Kalksteen verbonden zijn, wier breuk zich witachtig of geel vertoont, en waarin men, hier en daar nog ondergemengde schulpen of slakkenhuisjes vindt. De steensoort is bros, en laat zich gemakkelijk aan stukken slaan; met de sterke mineraals Zuren, bruischt dezelve hevig op, en zij bezit alle eigenschappen van echte Kalksteen.

Tusschen de gemelde uitstekende Rotsen, vindt men in de lagere plaatsen, eene broze witachtige

steensoort, die zich gemakkelijk fijn wrijven laat, en van de gewone, gebluschte Kalk niets verschilt.

De geheele vlakte op den top des heuvels, waar deze Bronnen geplaatst zijn, heeft eene rondäch-tige gedaante, en omtrent vijf en twintig roeden middellijns; de afhellende kanten zijn met onge-regelde, diep-uitgeholde gangen in alle rigtin-gen doorkruist, die door de Rhinocerossen ge-maakt zijn, en waar in zij naar de Bronwellen opklimmen.

De Inlanders hebben bemerkt, dat deze Die-ren en de Herten, die op de schrale heuvelen, in den omtrek, weiden, het aangename zuurächti-ge water dezer wellen, met groote graagte drin-ken.

De Bron zelve, heeft vijf verschillende opwel-lingen. De eerste is in eene groote en hooge Rots verborgen: deze staat aan den bovensten kant der vlakte en heeft eene geregeld ronde, van boven kegelvormig toeloopende gedaante. De Rots is vijftien voeten hoog; in de bovenste punt is eene langwerpig ronde opening, die men van beneden niet gewaar wordt, hebbende omtrent twaalf duim middellijns; achtien duim beneden derzelve rand, bemerkt men, in het midden van

de Rots, eene wel, waaruit het water hevig bruisend opkookt, en op de oppervlakte menigvuldige Luchtblaasjes afscheidt. In smaak en overige eigenschappen, komt het water met dat der andere opwellingen overëen.

Omtrent eene roede noordwaarts van deze Bron, vindt men, in een vlak, ongeregeld, uit dezelfde steensoort bestaand bekken, eene tweede opwelling van Lucht-zuur water; rijzende op verscheidene plaatsen hevig borrelend in de hoogte en hebbende omtrent de diepte van twaalf duim. Van alle de verscheidene opwellingen is het water, in dit bekken, het sterkste van smaak en het volkomenst met vaste lucht verzadigd.

Op den afstand van anderhalve roede verder noordelijk is de derde en grootste Bronwel, waarvan de rotsächtige bak grooter en dieper is, dan die der anderen; het water welt hier, als met groote hevigheid kokende in de hoogte. De noordelijke kant dezer opwelling is met eene groote, hooge, ongeregeld overhangende rots, overdekt en beschaduwd.

Omtrent twee roeden van deze opwelling, in dezelfde rigting, heeft men langs eene groote uitstekende rots, nog twee Bronnen in ongeregeld-ronde steenen bekkens, waarin het water zacht borrelende opwelt, zich hieruit ontlastende



de hoogte langzaam afstroomt, en in de uithollingen der steenen, die in de vlakte liggen, verzamelt: de geheele oppervlakte des uitgelopen waters is met schilfertjes van kalksteen bedekt, die zich door blootstelling aan de Lucht hebben afgescheiden.

De smaak des verschen waters, bij de Bronwel is geestig en scherp, echter zuiver, aangenaam prikkelende en zonder bitterheid, toonende het aanwezen en de bijmenging eener groote hoeveelheid vaste Lucht, en is naauwlijks van het Europese Selters water te onderscheiden.

De volgende Proeven toonen de Eigenschappen en Bestand-delen des waters aan, in zoo ver dezelve door tegenwerkende Middelen, (Reagentia) kunnen daargelegd worden: de vergelijkende Proeven werden met Europeisch water gemaakt, dat in eene digte kruik bewaard was, en nog in een' volkomen graad, de eigenschappen des echten Selters water bezat.

**PROEVE I.** Eene tot op de helft met dit water aangevulde fles hevig schuddende, ontwikkelde zich de vaste Lucht in menigte, en plofte met een sterk gedruisch, uit de opening: het water schuimde met de gewone teekens der aanwezigheid dezer Lucht.

Vergelijkende Proef. Deze Proef werd met Europeisch Selters water herhaald en had dezelfde uitwerking.

PROEVE II. Drie druppelen Zwavelzuur met een halve once van dit water gemengd, veroorzaakten eene aanmerkelijke opbruising, en eene menigte Luchtblaasjes rezen in de hoogte, welke zich door de vloeistoffe omteschudden vermeerderden.

Vergel. Het Selters water verhielt zich even zoo.

PROEVE III. Eene halve once water, met eenige druppelen kalkwater gemengd, deed witte wolkjes te voorschijn komen, en een fijn vlokächtig neerzetsel scheidde zig in geringe hoeveelheid af.

Vergel. Met Selters water had hetzelfde plaats, echter werden de witte wolkjes weder geheel en spoedig in de vloeistoffe opgelost.

PROEVE IV. Eenige kristallen van suikerzuur veroorzaakten in het water eene sterke opbruising, en een melkächtig afscheidsel volgde, dat na eenige uren als een wit poeder op den grond viel.

Vergel. Deze Proef werd met Selters water met hetzelfde gevolg herhaald.

**PROEVE V.** Door het Planten Loog-zout, werd in het water een menigvuldig wit neerzetsel voortgebracht, dat zich in een cirkelvormige gedaante nederzette.

Vergel. In het Selters water volgde eene gelijksoortige neêrploffing, echter was dezelve minder menigvuldig.

**PROEVE VI.** Eene verdunde oplossing van zilver in salpeter zuur, veroorzaakte een menigvuldig wit, melkächtig neerzetsel, dat na eenige uren in lood kleur veranderde.

Vergel. In Selters water bragt deze oplossing hetzelfde verschijnsel voort.

**PROEVE VII.** Door de oplossing van Lood in Salpeter-zuur werd het water witächtig (opalizerend) en na eenige uren bemerkte men, een ligt witächtig neerzetsel.

Vergel. Selters water verhiel zich ook aldus.

**PROEVE VIII.** Door toegevoegd zuiver Alcohol, werd het water zeer weinig troebel, en eene nauwlijks bemerkbare melkachtige stoffe zonderde zich af.

Vergel. Selters water werd door Alcohol niet merkelyk veranderd.

PROEVE IX. Door het Blaauwzure Loogzout volgde in het water geene verandering van kleur ; noch

PROEVE X. Door de op Alcohol getrokken Galnoten.

Vergel. Ook het Selters water werd door deze beiden niet veranderd.

PROEVE XI. Het met een aftreksel van Sappan hout gekleurd papier, werd na een korten tyd in 't water gedompeld te zijn, paarsüchtig, het Blaauw Bloemen papier, groenüchtig ; dan het Curcuma papier bleef onveranderd.

Vergel. Selters water werkte op gelijke wijze op deze drie verschillende gekleurde papieren.

PROEVE XII. Acht oncen dezès waters werden in een Zand-bad, aan eene gematigde hitte blootgesteld : menigvuldige Luchtblaasjes ontwikkelden zich en rezen in de hoogte. De graad van hitte vermeerderd zijnde, begonnen zich witte schilfertjes op de oppervlakte te vertoonen, die na eenigen tijd vermeerderden, en het water met eene dunne, witte korst overdekten, zoo dat het zich als kalkwater vertoonde, dat lang aan de open Lucht was blootgesteld geweest. Den zuren geestigen smaak had het water geheel verloren.

Vergel. Met Selters water werd deze Proeve herhaald, en de uitkomst was naauwkeurig dezelfde.

*Gevolgtrekkingen van deze Proeven.*

Door de Ite IIde en IIIde Proeven wordt men onderrigt, dat het onderzochte water eene aanzienlijke hoeveelheid der vlugge, elastieke Luchtstoffe, gewoonlijk vaste Lucht genoemd, in zich bevat. De IVde Proeve toont het aanwezen eener aanmerkelijke hoeveelheid Kalkaarde. Door de Vde Proeve werden alle met het water gemengde en daarin opgeloste aardächtige deelen van verschillende soort, nedergeploft. De VIde Proeve leert ons het aanwezen eener geringe hoeveelheid van Zee-zout zuur, dat waarschijnlijk in verbinding met de Kalkaarde, als Zee-zoutzure kalk in het water is opgelost; het is bekend, dat dit zout door Alcohol ontbonden wordt, om welke reden ook in de VIIte Proeve, door bij gemengd Alcohol, eene naauwlijks bemerkbare troebeling volgde. Men kan ook uit deze Proeve verder besluiten, dat noch Salpeter, noch gevitrioolde Wijnsteen, noch Glaubers zout (die alle door Alcohol afgezonderd worden) in het water bevat zijn. De VIIde Proeve toont op gelijke wijze het aanwezen van Zee-zout zuur. Uit de IXde en Xde Proeven blijkt,

dat geene Yzer deelen in het water bevat zijn. In de XIde Proeve werd door indomping de kleur van het Sappan papier, door de in vaste lucht opgeloste aard-deelen veranderd; en hieraan is ook de groenächtige kleur des Blaauwen Bloemen papiers toeteschrijven. In de XIIde Proeve werd de vaste Lucht, door de hitte opgeheven, en deed, de daarin opgeloste Kalkaarde ten voorschijn komen.

Uit de vergelijkende Proeven, met het Europeische Selters water blijkt, dat het voornaamste verschil, tusschen die twee wateren in het volgende bestaat.

1.) Dat in de Proeve met bijgemengd Kalkwater, de afgezonderde Kalkaarde, in het Europeisch water wederom geheel werd opgelost, dewijl in het Javaansche water, een nederzinksel terug bleef; zie de derde Proeve.

2.) Dat door het Planten loog zout, in het Europeisch water eene mindere hoeveelheid van neêrplofsel veroorzaakt werd; zie 5de Proeve.

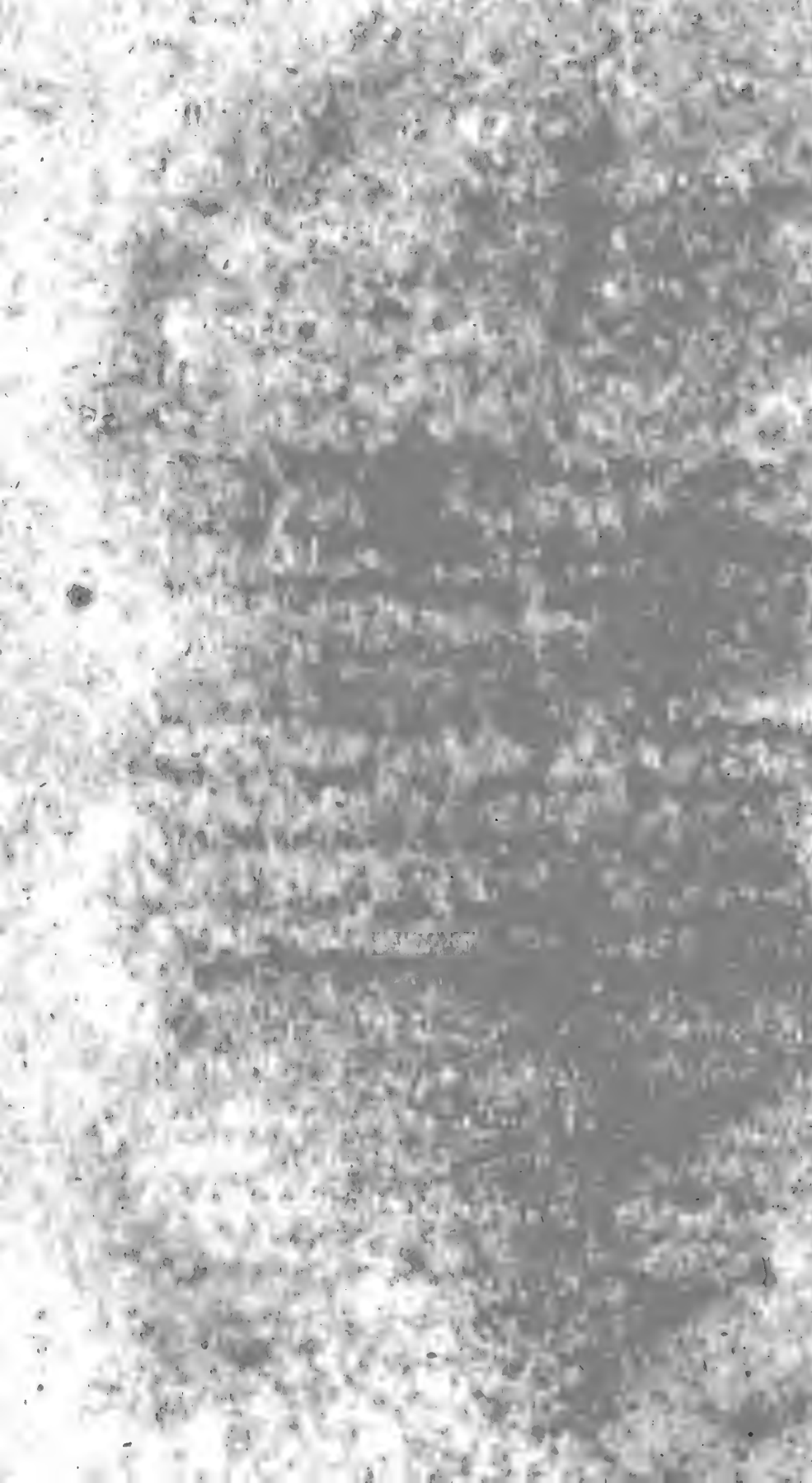
3.) Dat het Europeisch water, door bijgemengd Alcohol, niet veranderd wordt.

Deze vergelijkende Proeven toonen verder aan, dat in het Europeisch water, minder opgeloste Kalkaarde, dan in het Javaansche, bevat is, dat

echter de hoeveelheid van vaste Lucht in beiden gelijk is, bewijzen duidelyk de Ite IIde en XIIde Proeven.

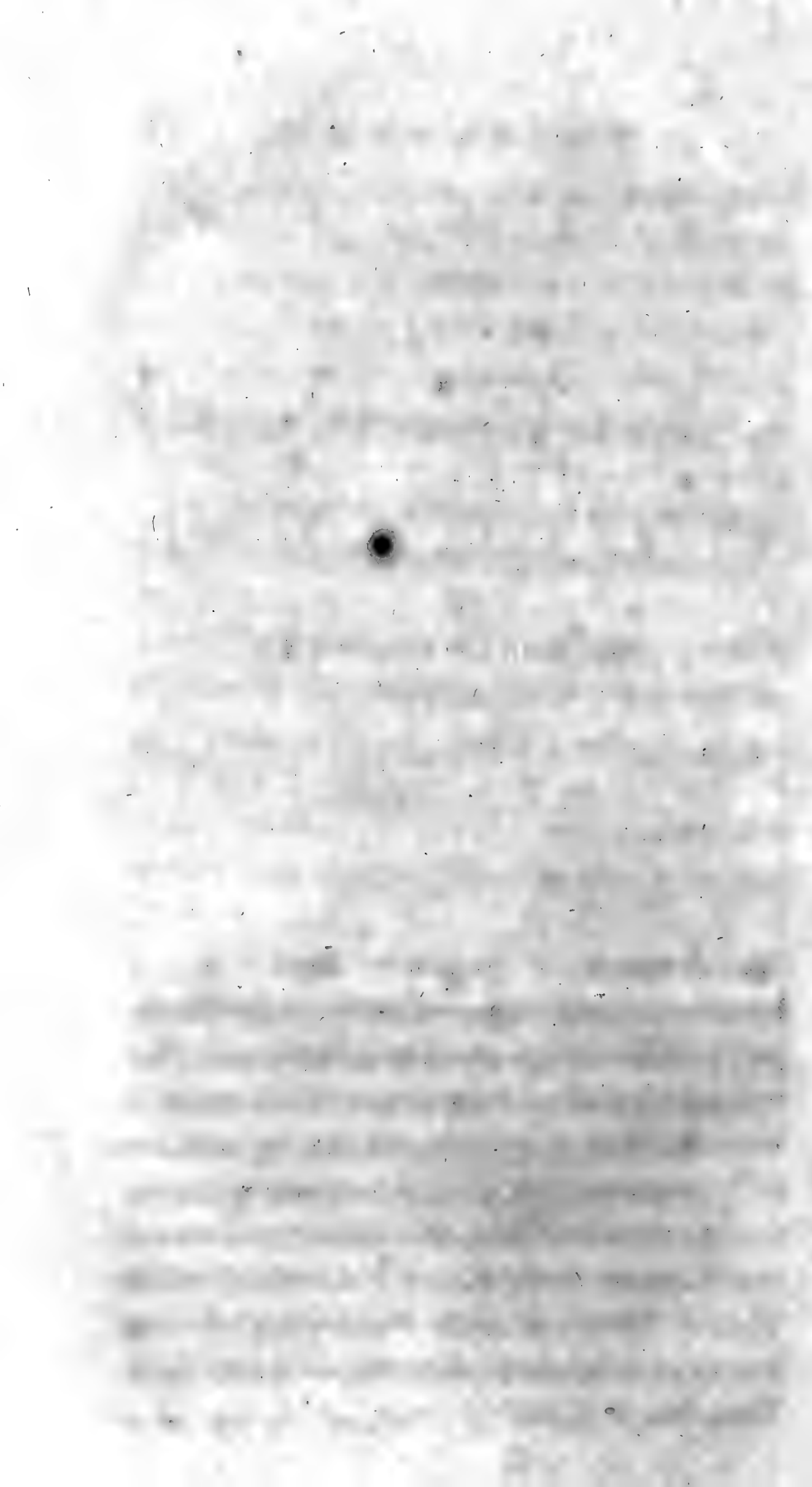
De overeenkomst tusschen het Luchtzuur water van Parakan-Moentjan, en het Europisch Selters water, in bestaand-deelen en eigenschappen, wordt door de vergelijkende Proeven genoegzaam aangetoond; echter blijft nog in 't oog te houden, dat het Europisch water in een zeer gematigd klimaat gevonden wordt, dewijl de Javaansche Bronwel in eene heete Luchtstreek gelegen is,

Het is daarom door verdere waarnemingen te bepalen, welken invloed de hitte des klimats op de bewaarbaarheid des waters heeft; of dezelve eenige afscheiding der bijgemengde aarl-en lucht-deelen veroorzaakt, dan wel cenige vermindering in den naauwkeurigen zamenhang dezer zelfstandigheden, waar van de goede eigenschap des waters voornamelijk afhangt, wordt voortgebracht. Van het versche water kan men zoo wel in geneeskundigen als in huishoudelijken opzicht, hetzelfde gebruikt maken als van het Europisch,





*[In publishing the following paper, we regret that it is not in our power to furnish Engravings of the Plans and Drawings referred to by Colonel Mackenzie.—We must also request the indulgence of the reader to excuse any errors of the Press, this being the first English paper printed in the Transactions, and the copy left by Colonel Mackenzie with the Society, being in many instances imperfect.]*



# IX.

---

## NARRATIVE

OF A

JOURNEY TO EXAMINE THE REMAINS

OF AN

ANCIENT CITY AND TEMPLES

AT

BRAMBANA IN JAVA.

---

*(Extracted from a Journal kept by Lieutenant  
Colonel MACKENZIE.)*

---

JANUARY 19, 1812.

1.—ARRIVED at Brambana about 9 A. M. by very deep bad roads, and put up at the Chinaman's Bundarce near the road.—While breakfast was getting ready I stepped out, walked across and along the road; and, by a path winding near the river, wandered among ruins evidently belonging to some great building, till at last I got into the square, inclosing the Ancient Pyramidal Mounds of stone directly opposite the Chinaman's, and known by the name of Brambana.—(See Sketch Plan, No. 1.)

2.—I wandered among these ruins unaccompanied by any guide ; followed the course of the river from the road, passing over large blocks of cut stone, disjoined from their original walls, which could be traced in several places ; whence it appeared that besides the great double square inclosing the ruinous Pyramidal heaps,—some other buildings stood formerly within this angle formed by the river with the road.—After walking with difficulty over these broken walls, which are surrounded by wet paddy ground, I got within the second inclosure, and passing through between two ruinous buildings, I turned off to the left between the third and fourth.—These masses, which at a distance appear like Pyramids, on close inspection are found to have consisted originally of Towers or Temples, whose bases were square ; but the outward coatings of sculptured stone being torn off, are tumbled into heaps around them, thus forming the shapeless hill-like masses which the traveller sees from the road.—The lists and fillets of the base are discovered in some places through the ruins and branches of Banian.—I climbed over the ruins of two of them ( the third and fourth ) and ascending between them, turned off to a cavity that appeared on the left ( or No. 2, ) which I found contained an Image sculptured on stone, representing

Endok Lora-jongran, and which if I am not mistaken, resembles Bavani or Parwuttienraged, holding a figure by the hair of the head ; she stands on an animal which I now suppose to be Basweswur, though I formerly took it for Maheswur.—Her six arms, holding the several attributes of the Chank, Chacrum, &c. are represented according to the Hindu form, and one feels no hesitation in considering this belonging to the Mythology held by the Vedanta Bramins of India—the stone was yellowish colored, and some grass placed before it shewed it to be still an object of veneration and worship.—In fact, I found two or three natives now followed me, who by their attention to the *Tuan*, seemed desirous of cultivating my notice ; they told me this was Lora Jongran, and offered to conduct me to another object of curiosity.—The Chapel in which this figure was placed is about 8 feet square, and its roof is formed by a series of plain blocks, raised sloping up to the top, which is covered by one flat stone ; so that the roof forms a Pyramidal funnel of steps reversed, rising from a plain square.—On each side of this figure appeared a pillar crossed, which at first sight seemed as if fallen into that position ; but on narrow inspection seems originally placed so, and I think is meant to convey an idea of the God-

ness arising from the two pillars torn asunder—this idea is also supported by the well we find directly before the Goddess, which leads me to conclude that the same story is represented here as at Tripanticum\* and other places, where a well usually accompanies the representation of the Goddess in this wrathful mood, whether by the name of Parwuttee, Bovanee, or Doorgee. As this Temple or Chapel is evidently an appendage to the great one, which must lie more to the centre, I clambered over the stones round to the west side, where in like manner I found another Chapel of the same dimensions, (No. 3,) with a large image of Ganésa upon its Pedestal; it had nothing remarkable in it, excepting that it was not accompanied by the Vehanum of the God.—I had to descend two steps to it.—This my assiduous conductors named Gaja-Moādoā.

3.—From thence I clambered higher over vast heaps of stones, till I came to the south side, where I discovered a cavity, into which I had to descend with some difficulty on account of

---

\* Tripanticum, a place of Hindu Worship, near Innacōnda in Guntoor, where the Goddess Bavani or Parwutti was formerly worshipped with sanguinary rites.

the stones that blocked up the passage and obscured the light; here I found a stone overturned and firmly sunk in the earth, on which was sculptured the statue of an aged Chief or King, remarkable for the Majesty and gravity of its aspect—its flowing beard, its raised aquiline nose, and Roman countenance, far different from the Malay, Javanese, or Hindoo outline; it holds a rosary in the right hand, and its left hand seems to have been fixed on something resembling the handle of a sword; but the fingers being damaged, this is doubtful.—The legs are wanting, and seem broken off from the original relievo—near its right side is a staff with a Trident;\* the Crown, Bracelets, and Drapery, as it lay along, are represented in Figure, No.—

4.—I found it impracticable to go round to the east side, or to ascend higher, but it is probable that the grand entry to the interior Temple may have been on that side.—The whole of this Pile, Pyramid, or Mass of Stone may be perhaps about 60 feet high, and to the doors which I entered about 25 feet.—Some ornaments were visible on

---

\* This Trident headed Staff I have since found on several Sculptures in Java, and seems designed as a Sceptre usually designating Royalty and Commerce.

the corners of the abutments and pilasters that occasionally peeped from among the stones or lay among the ruins ; among these the hideous Gaping mouth that is so frequently seen here terminating the projections of the Stone Beams ; also small ornaments terminating or crowning pilasters, probably an imitation in miniature of the real order and elevation of the Temple.—Borders in Arabesque composed of flowers, a running foliage of roses, lotus, &c. on the pilasters.—In this first Temple and some others, the names of some Engineers and Surveyors who had visited the place were written, some of whom we know, and whence the identity of the buildings described or laid down by them is ascertained ; among these were some of our acquaintance.

5.—I now returned after passing about an hour among these ruins, and in tracing the direct path back to the Chinaman's house, passed a great variety of blocks, stones and other fragments of these venerable piles ; lastly, next the road, a very neat naked image sitting, of a *Jain* or *Boudh* statue, the head of which was loosened by some profane hand, but still placed on the neck—the mild and innocent look of this figure is highly characteristic.



6.—After some refreshment, about half past eleven A. M. Mr. Knops and myself, with the Draftsman, and some villagers provided by the Chinaman (by the Sooracarta Gentlemen's orders) proceeded in more form to perambulate the ruins; chairs were provided, covered with canopies of leaves and each carried by 4 men on poles of bamboo, but my impatience did not always permit me to avail myself of this convenient coverture from the sun's scorching rays, amidst the tantalizing ruins that surrounded us—we first proceeded to the Great Inclosure I had just left, which is what is properly called Brambana.

7.—Though three Mounts, Hills or Pyramids of stones form the first conspicuous objects that attract notice from the road, yet on near inspection it will be found that there are more, apparently of smaller size, some of them in greater or less preservation; although these observations are the result of other visits, yet for the sake of uniformity, I shall here enter at once the desultory remarks which I was able to make.

8.—There were two stone walls in squares, inclosing the whole and each other, the blocks of which were from two to three feet square, and long in proportion; chiselled and adapted to each

other, frequently with channels running through them—most of these blocks are plain, and tumbled together in inextricable confusion.—Among these no sculptures are seen ; it is probable they only belonged to the Gateways, which are no longer traced, except by greater ruins, or in the casing of the Temples.—In the Angle of the inclosure, particularly the N. W. near a great tree, are the ruins and scite of a smaller building, distinguished by its foundation or base ; and also the base of a smaller building, perhaps a choultry, in the Hindoo stile ; the whole breadth of the Western part is taken up by the three great pyramids, which I take to be now in these ruins from fifty to sixty or seventy feet high ; to the right of these, as we cross the inclosure from South to North, are three others, smaller originally, as is evident by the ruins of the most Southerly, which preserves more of its original form, or is less buried in stones ; for it is to be observed, that none of that rubbish found in other buildings, and composed of bricks, earth, smaller stones or other materials used to fill up, is here to be met with ; the whole appearing to have consisted of blocks of stone, fitted to each other and not yielding to time. Further to the West are smaller Temples, into two of which I looked

but perceived nothing remarkable, excepting two small Tigers well depicted on one corner stone. The whole of the area was so much incumbered with stones, weeds and bushes that I could not positively determine the number or regular plan of their distribution; but I should guess there were altogether about 9 or 10 of these separate structures within this square.

9.—After making these observations on the ruins of Brambana, we were carried in our chairs through the paddy fields in a northerly direction about a mile; here we observed the paths built up frequently with cut and sculptured stones, the remains of the ancient works; at last passing through groves of trees, we arrived at the commencement of the Chandi\* Sewo Temple, the same which Major Cornelius describes in a Memoir of 1807. The bushes here are so thick that we did not perceive, till we came suddenly on them, two gigantic figures of porters, apparently kneeling on pedestals facing each other, resting on clubs held in one hand; a snake winds round one arm, and in the other they seem also to hold another. These images

---

\* Chandi, a Building or Temple—Sewo, one thousand—Chandi Sewo the thousand Temples or Buildings.

have their hair in regular curls (and a Bandeau round the head) somewhat resembling the Persepolitan figures; the noses prominent and raised; the Eyeballs glaring; their arms are ornamented with Jewels, and in each of their girdles behind is a short dagger with a cross handle.

10.—Passing from the Watchmen, which are on the West side of the Temple, we crossed the ruins of a wall, evidently the ancient inclosure, which is composed of large blocks; in this wall I found the trunk of a large naked statue of black stone (without the head) which seemed from the want of dress to be Jain; we now entered on an avenue of ruinous Temples, apparently square, which led to the grand fane in the centre; the first four have their doors facing each other. In the first on the right was a fine Jain image, naked, with curled locks, and a small elevation on the head. The others were vacant and had been robbed of their former inhabitants; these Temples we could perceive, though defaced by time and obscured by bushes, had been regularly built on a handsome base, on which were raised compartments occupied by urns with flowers, pilasters ornamented with Arabesque, and niches in which the remains of figures were still visible, though much damaged; above

had been certain ornaments which could not well be determined, and the form of the surmounting crown was entirely hid ; four more of these Temples were passed before we reached the stairs leading to the central edifice, over a kind of moat or ditch, evidently of latter time ; by 5 or 6 steps we ascended into a Porch, in front of which was an Arcade of 3 Arches, pointed and bordered like the stile called Gothic or Arabic. The central Arch had a kind of Altar carved with an urn, flowers and several other emblems ; near these, two resembled the figures of the Chank ; others a crooked dagger, such as we sometimes meet in these countries. The two side Arches were ornamented above in like manner ; the sides of the portal had also three Arches, but no opening in any, excepting one to the South through which we passed round to the South side, where another avenue of ruinous Temples leads to a Gateway, in which four more Gigantic Porters are placed ; and then by two other Arches to the Eastern entrance, whence by eight steps up to the body of the Temple, which is a square apartment of about thirty-two feet high ; above this the vault rises about thirty-two feet more, formed in steps, all of stone, neatly cut, but now ready to tumble in ; the walls plain

and smooth. The only opening is in this Eastern door, opposite to which is a grand Altar, which fills up the whole of the West side.

11.—The Altar is formed with a regular base or pedestal and terminated by a neat corner; steps lead up on each side to the wall and thence inwards to the body of the Altar. Light is thrown into the Area by a lateral opening above. The vault of the apartment is octagonal, formed by crossing the four angles of the square with other stones transversely.—On looking up, the mind is struck with awe and terror, as nothing appears to retain the stones which bulge out, and threaten to overwhelm the curious enquirer amidst their ruins, from a height at least of sixty feet.

12.—On the eastern side was a double portal, the outer of which had arcades, ornamented in the same manner as the west, or first we entered.

13.—The weather now getting rainy, I could not examine these interesting ruins so minutely as they merited; the northern and eastern avenues of smaller Temples, were therefore not so scrupulously examined as I wished; most of them are damaged, some rent, others half tumbled in, exhibiting a confused mass of stones and

bushes ; the whole of them are raised on regular bases, and the second order divided by pilasters, ornamented generally with an arabesque foliage or of roses ; in the niches between the corner pilasters and the central compartment, stood statues in relievo, male or female, in the most graceful attitudes ; sometimes holding up the right hand with a finger extended, and the left embracing a Lotus branch which grows near them bearing one flower. In the central compartment, an urn, crowned with flowers, is represented, the chank lying on each side of it ; at top surmounted by the grotesque monstrous extended Jaws and glaring eyes which form a constant accompaniment of all these Temples. In other instances the figure holds up a Lotus in one hand, and in the other a maul or club ; some figures seem to have a long stand or candelabrum near them ; in one case I think I observed a Vase, with a spout not resembling any European workmanship.

14.—Most of these Temples are destitute or have been robbed of their object of worship. In one (I have already observed) I saw a Jain or Boudh naked figure. In another I observed the three close sides were ornamented with a

kind of three branched chandelier, supporting three arched niches or shrines a little raised or ornamented.

15.—It is to be remarked of the whole of these buildings of Chandi Sewo, that no emblem or symbol of the worship of the Vedes of Seeva, Vishnu, or Brama appeared, except the Chank, which might be merely an ornament, unconnected with the worship here, whatever it might have been.

16.—We enquired and sought in vain for inscriptions and characters; an aged Mantree, who was our Ciceroni, intimated there were some in the ruins of the upper part, and I clambered in quest of them upon the ruinous roof; but what was pointed out consisted merely of single characters or figures which seemed cut on the stones; and as these were on the parts built into the wall, I can only consider them as marks or numbers by which the stones were probably recognized after they were brought ready cut to the building. (See the characters annexed No. 12.)

17.—We proceeded on our return from the south gate, where were two Gigantic Wardens, in the same garb and attitude—about half way we



arrived at another Temple whose ruinous Pyres we had observed in passing to Chandi Sewo, on the right—these consist of one principal Temple in the centre of a square of smaller ones; but some of them were so entirely ruined, that I could not determine the real number that once existed, though I guess there might have been about fourteen or sixteen. I think this was named Tonongo. The central Temple was square and plain within, surmounted by a pyramidal roof built up in steps within; its stones were massy blackish blocks, and ornamented a good deal in a superior stile without. No Image or Sculpture within.—Eleven arched niches were worked in the wall with Gothic arched tops.

18 —Without this beautiful edifice, I found a block lying, of about three and a half feet square and two feet thick, on which a beautiful female figure was sculptured in relievo and defended by a border equally thick (see No. 13) the beauty and grace of the attitude was striking;—it seems to hold a folded parasol in the right hand, and a Tulip or Lotus in the left—this stone probably was worked into the walls of one of these Temples, but I am uncertain which.

19.—We returned by three P. M. and in the evening we walked out on the road to Djocjocarta, and crossed the River Kali-Upas, &c. observed a stone cut in a particular form, though different from the usual Hindoo Lingam (I had it removed to the Chinaman's on the 21st.)—Proceeding further, observed in the fields to the left a statue, which, on examination, appeared to be a Jain Figure, naked, sitting, complete; behind this hedge there were two or three more, broken—all of black stone and of a considerable size. Shortly after we came to the spot where, on the 24th December last, in passing, I had observed some statues close to the road.—One of these seems to be a *Jain-Feertur*, the other is decorated with ornaments, and is meant probably for some Prince the Endower of a Temple; both these are represented sitting, and have nothing monstrous (see No. 14 and No. 15,) a small mutilated statue is placed near them, and two fragments on which the Yali is sculptured.

20.—Returned at six A. M. much fatigued, though highly gratified with our inspection of these antiquities—the evening was fair and pleasant.—We were lodged in the Chinaman's house

where we were accommodated with the open hall on pillars in front, with chairs and tables, where we sat, wrote and eat — Within, a sleeping room and tolerable beds were allotted to each on either side of a hall, where the family eat their own meals under the auspices of the huge painted Joss.

21.—The evening was passed after dinner in writing our notes, and in Mr. Knops' taking down the traditionary account of Buka Embok Lora-Jongran, as translated verbally by one of the younger Chinese, from a village-Mantree who promised to bring a MSS. containing its history in the morning. It rained at night; we slept perfectly secure, undisturbed by any apprehension of those disorders which so seriously threatened the tranquillity of this country in December last.

JANUARY 20, 1813.

22.—It rained in the morning, which prevented our going out as intended till after breakfast; about nine it was still heavy, however, we determined to proceed, and instead of going to the Temples on the Djocjocarta road, we were conducted by our venerable Ciceroni and guide, through the paddy fields to the south of Bramba-

na, about one and a half or two miles; the bearers waded through mire, and the passage was at times so narrow and deep as to oblige us to get out of the Chair repeatedly. Arrived near a village, we were conducted through a field across a stone inclosure, which now exhibited various specimens of ancient remains in chiselled stones. The first object that attracted my notice here was a gigantic figure such as we had seen yesterday, on his knees, looking to the east, on a pedestal; the countenance strongly marked, resembling a Negro, with great eyes, prominent Nose and lips, teeth exposed or rather grinning. The Hair curled and the head surrounded by a Bandeau with ornaments; the curls seemed much to resemble those of the Persian figures at Persepolis; in its right hand it held or rather leaned on a club or mace, in its left it grasped something like a snake; the belly prominent, a belt round it, a Necklace of Pearls or large beads round its neck, and rich jewels in its ears, the features well delineated in hard dark stone; its teeth seemed as grinning; directly opposite, its fellow was found thrown down prostrate, broken from its Pedestal—the height kneeling may be seven feet.—This position naturally made me

look to the east and accordingly, within the inclosure, appeared a confused Pyramidal heap of stones, upwards of eighty feet high, which at first seemed to be a group or clump of Trees, in consequence of the Banian working up its way, and after preying on its bowels, finally overshadowing the very top, in such a manner as to prevent its real shape being known. (See Drawing No. 16.)

23.—Pulling down some of the stones, we got into the inclosure and minutely surveyed these antique ruins round and round. On minute inspection the following seems to be the best idea I could form of the whole plan of this Pyramidal Temple; I call them Pyramidal, from the first appearance from without of the *Toute Ensemble* of the structure, and also of the cavity formed by the roof within.

24.—The Temple has been in its original Plan built on a square foundation, from whose Base arose the upper part, to which a flight of steps ascended perhaps nine, ten, or twelve feet; this temple or apartment, elevated about twelve feet, had three openings or apertures South, North and West, but none on the East which appears singular; this Chamber, twen-

ty feet square, occupies the whole body of the Temple, nor did it appear to have any of the smaller apartments that in the rest are detached from the sides.

25.—The apertures or Windows did not however lye on the floor, for though the whole of it is covered with heaps of stones that have fallen from the inward coating, I could just perceive close below the South and North apertures the top of an Arched Door, which I apprehend must have led from below to the actual flooring.—Above these Windows the vault springs up at eight feet above the bottom originally composed of regular rows of stones, laid one over the other and projecting till they reach the top, allowing thirty feet for thirty stones; so that the height of this Pyramidal vault within is near forty feet exclusive of the height from the original floor—the walls were twelve feet thick at the apertures. Great part of the inner coating of the Temple having tumbled in and laying heaped on the floor, the interior structure of the masonry is disclosed, and shews that no cement whatever was used, the stones having been cut and fitted to each other, probably in the quarry—As they are at present, they

seem as if ready to tumble in on the least motion, and it is not without awe that one perceives, on looking up, a thousand heavy blocks held by little visible force, just ready to fall and crush and overwhelm the curious visitor. In its original state, judging from the remains, it appears to have formed a regular pyramid reversed to the very brow of a single stone entirely plain. An opening near the top admits light from the East, but I am not certain if it was originally so, and if it wanted this light the funnel must have been impenetrably dark—the whole of this chamber of darkness was entirely plain and devoid of ornament.—Nor could I perceive any Image or Sculpture within or without, though it is probable that the outside coating was ornamented in its original state with some of those chaste designs that we find in the rest.—I am led to suppose this from the vast number of broken mouldings we found built up in the stone-walls of the inclosure, on one of which I particularly observed a part of the frequent running Arabesque pattern; the stones that formed the inside coating were seldom more than one foot high and two or three long; vast numbers were not more than a foot in length; but some large blocks were visible in the heap on the floor, though on the

whole we saw none of those stupendous blocks that excite our surprize in the Carnatic Temples ; the stones were generally dark, but many of them white and grey, of the softer kind of the Solo stone, and the freshness of the color might perhaps be owing to their having been built up a new ; the marks of the chipping knife were visible on many.

On viewing this Edifice from without we can frame no just idea of its original form, as from the working of the Banian which has sapped its strength and shades it on all sides, and from the dilapidation of the original coating, nothing can be seen but a confused hill of stones, forming an aukward Pyramidal heap, on near approach exhibiting the three narrow openings through the gloomy shade of leaves and branches—with difficulty clearing away a passage, I clambered over heaps of stones to these narrow openings.—I think it is probable that the stair case entered below the heap and is now no longer visible. On clambering over a heap of this kind and entering by the Western aperture, I found myself at once in this chamber of stone, on a hillock of square masses tumbled together as they fell from the vault above, which, on looking up, threatened to pour a shower of ponderous blocks upon the curious traveller.



After exploring this interesting vault, while I could not help thinking of the Pyramids of Egypt, I searched cautiously through the bushes within the stone inclosure of about two hundred yards, which contains it ; I observed on the East face two joints of a Circular Pillar of two and a half feet long and the Capital of the same ; from whence I conjecture that a pillar of twenty feet high might have stood here, as well as on the west side where joints of a similar nature were found—from no other vestiges appearing I conclude there were only two pillars near the place indicated in the plan A.—Few ornaments appear on these stones ; no figures ; the Arabesque has been mentioned already ; some circular fractured pieces gave indication of a greater degree of ornament, which perhaps belonged to a smaller Temple within the north west angle of the inclosure, denoted by a heap of stone.—Without also were numerous remains of stone in walls, and among them I observed one of the Javanese burying-places or Cramats, where the Sepulchre was of stone or wood. The size of the trees that have overgrown these Temples are sufficient indications of a great age.

While I was employed in examining the ruins, our ancient Conductor had discovered the

*Batu Tulis* he had originally mentioned, and an amateur can only feel any sensation similar to our's on finding at last a monument in our reach, that promised to throw the light of written evidence on these interesting remains.—It was in fact to all intents a real Hindu Sassanum, of grey granite, a stone not observed in Java, covered with characters in fair and legible letters of the real Devanagri. Unfortunately it had been broken into three pieces, and one of them was missing, but it is presumed enough remained to discover or lead to something beyond mere hints, if these characters contain any of the languages of India. I had fortunately oiled paper with me, and the draftsman was instantly set to work to take the *Fac Simile*, as soon as the difficulty of getting some Chunam was overcome; meantime the Natives sought with assiduity, stimulated by a promised gratuity, for the rest of the inscription, and though they were not lucky enough to find it, their toil was rewarded by two small blocks inscribed with characters apparently of the same kind.

The weather still continuing heavy and the sun obscured with some prospect of rain, we followed our Conductor to the hills that lie south of Brambana, in quest of a Goa, or Cavern, as

I understood it, and of the *Krattan* of an ancient Raja; in crossing the plain fields under culture and flooded, we were repeatedly obliged to get out of our chairs and trudge through the mud for the distance of a mile. This range of hills runs in a direction nearly South West, parallel to the plain or valley of Brambana, and in height and appearance resembles some of those low ridges we meet with in the Deckan, where the red Porous Stone terminates in a soft calcareous substance, as near Toljapoor, Culburga, &c. on ascending the side of the hill we met masses of greyish stone of this calcareous species, which seem to be of Volcanic Origin, below the first layers of which we sometimes observed a vein of brittle earth, whitish, fractured by many lines.—The first attempt of our Guides to go strait forward being erroneous, we returned, and were conducted along the brow of the ridge, in a drizzling rain, for about two miles, which however the toil and rain, induced us to reckon at three; at last we were led off by a winding path cut among the luxuriant herbage and young teak trees, by a kind of opening in the ridge, which finally terminated in an ascent to a wall and mass of rock, into which is cut a small chamber of about four feet and a half high, twelve feet by nine, with a wide door, half

filled up with stones ; in the back part is a niche designed, perhaps, for sleeping, or for an Altar—the stone is evidently of the Tuffa kind, and has been cut when soft ; above are the traces of a foundation designed. The bed of rock appears cut beyond this chamber into perpendicular facings, whereon the marks of the sharp instruments are very evident in the soft stone ; further on we met another chamber, but smaller, and near it also was a square bason of water, cut into the rock ; as we ascended we met several stages of rock cut perpendicularly ; in one place a series of steps formed a stair-case.

Of the use of these Chambers the Natives could give no information nor form any conjecture ; I had some obscure recollection of the Tombs of some ancient Kings being in the hills near Brambana, but they could tell nothing of it ; the universal *Trada* resounded to every query ; they say that the Susunan and Sultan, when embarrassed or melancholy, retire to these cells, and shut themselves up for eight days in austere fasting and contemplation—whatever may be in this, it is extremely probable that they might be intended for some such purpose, which the provision of water in the cell seems to corroborate, and also the contemplative Jain Saniassi, represented in a

posture of mediation directly facing the first cell.

We were now conducted by a circuitous route to the Royal Krattan, to which we were literally obliged to cut our way; the path winded back and brought us in the hollow over several blocks of cut stone, the ruins of dilapidated walls; ultimately we came to a stone-wall built of blocks of large dimensions regularly cut; 16 or 20 feet beyond which, we arrived at another, facing a terrace, the scite of the Krattan, which is entirely overgrown with bushes and luxuriant verdure, grass and trees; it was in vain to go further; the rain increased; it was getting late and the forest grew on our hands; a huge trunk impeded further progress, and we returned from the hollow which bounded this side of the area, without being able to discover its plan or extent. From the facing of the basement, however, it was easy to see that the structure had been regularly designed and on a magnificent plan; the number of blocks cut and chisselled appearing among the bushes, confirmed this, and I am convinced that in the dry season the original form of this palace might be traced by its ruins.

It was observable that the further we advanced up the hill and within the hollow, the rocks

or indurated Tuffa more and more resembled the Culburga, Calliani and Bezoara veins of stone; and I do not hesitate to aver, that we here found the Quarries, where all the immense materials required for the City and Temples of Brambana, and even for other Cities also, might have been found.

This discovery also corroborates the tradition of a City being here founded by a Foreign Colony, whose Artists being ingenious, chose a spot near to the best materials; this circumstance also has some analogy to the observation of so many Caverns, Sculptures and Architectural Decorations being found in the vicinity of great Capitals, and of Quarries of ready wrought stone. Bezoara, Ellora, Canara, Curla, Mavellipooram, and finally Brambana bear evidence to this fact; and if we should discover the same stile, drapery, and emblems, in each of these places, we might suspect that in the same Government, Empire and People, these marks of refined superior skill in Architect originated. Might not Guzerat furnish some lights on this subject?

We descended the Hill about half past one, and returned through the mire and rain, a good deal fatigued, to the China-man's Dwelling at Brambana.

The evening being fair, we proceeded on the great road S. W. towards Djocjocarta, to examine the antiquities on that side, particularly two Temples which I had observed on the 24th, 26th and 29th December, on my way to and from that Residency. We crossed the river *Cali ūpas* about six hundred yards from the Chinaman's house or pagger, where the limits of the ancient Brambana extended; and after passing about three hundred yards, observed a large Statue in a field to the left from the road, which I found to be a naked figure with a curled head-dress exactly resembling the Jain figures on the coast; though in a sitting posture, looking to the road, and the north, it was easily discovered from its size, which in this position is about five feet, of a hard dark stone; behind the hedge, covered with weeds, were the ruins of two others overturned—we advanced to the next rivulet where a party of wretched diseased mendicants are usually stationed, with hideous countenances destroyed by disease, and more like spectres than human creatures—they appear to live in huts close to this spot, or rather drag out a wretched existence, and whenever we approach they assail our feelings with the most piteous cries—here on the left I found the two Images that had

attracted my notice on the former journey close to the road. One of them a plain Jain figure cross legged, with its hands resting, the palms turned up, on the soles of the feet; it appears to be entirely naked and with the curly head. The other appears to me to represent some person of rank rather than a devotee, from the rich ornaments which decorate the arms, neck and waist—its right hand is placed on the thigh; the left placed behind the left thigh in a hanging posture; on the head an ornamented coverture, perhaps a crown—both are on flat pedestals and about the same height, three and a half or four feet—between these were placed two small pieces, one of a grotesque form, the other I believe a decapitated small Jain figure. All these figures bespeak the vicinity of some Temple, where probably they were placed, excepting No. 24, which from its size must have been fixed where we found it.

After crossing a rivulet which runs from a spring not eight hundred yards to the right, something struck me among the hedges to the left, not two hundred yards, distant where I found close to a hedge, a statue of much the same countenance, size and decorations as the gigantic Porters before the Northern Temples; it knelt



on one knee, leaning the right arm on a short thick mall or club, round the left a Serpent winded or clung—its position rather leaning forward and inclining to the left; while its companion, which we immediately after found, leaned forward inclining to the right—both these figures seemed by their countenance, position and half inclined, half forward expression and gesture, leaning on their clubs, to be watching with assiduity the approach of any profane foot to the Temple; which we immediately after found behind them, and towards the road, but I must not omit that these four figures differed from the former in having no coronet or other ornament around their head; the curled hair was loose, neatly parted on the forehead; behind it flowed down over the neck into three rows of curls carefully arranged, and very much resembling those in which the Persian Monarchs and figures are represented in the Persepolitan antiquities.

It may also be observed here that the countenance of these figures rather inclined to the European, with an aquiline nose, and more regular features, than the Negro-staring visages of the Northern Temple.

Of the Temple behind nothing remained but several great round pedestals ( and capitals ) of several large pillars, forming the enceinte of an oblong structure, and several blocks and fragments of stones of a large size—no vestiges of a wall; I am uncertain which part of these were capitals, or pedestals—if all the latter, a considerable difference existed in the formation of each—a mound formed by a kind of ditch inclosed these, and had such effect in preventing their being seen from the road, and is so completely ruined, that it cannot be observed without approaching immediately to it.

As it was drawing late, we hastened without further examination along the road towards the further Temple —————; it is not above two hundred yards from the road, separated from it by the surrounding Paddy fields; the several stones of its structures being still entire, although the outward coating has been defaced, it is seen at some distance, but overshadowed by the branches and leaves of the baneful Banian in such a manner as to obscure a great part of the composition; enough however remains visible to exhibit to the traveller on the road the ruins of a real Hindu Temple, such as we find sometimes on the confines of Bednore,

## Canara and the West Provinces on the Toombodra.

In these interesting ruins are seen on a graduated order of basement, stones, pilasters, niches, statues and apertures, shaded and obscured by thick branches and foliage, which finally crown the top, and leave the inquisitor at a loss to determine the ultimate crowning of the original structure.

We found it, like the others, surrounded by a ditch and mound close to the walls; which I rather notice as I am of opinion that this ditch has been dug for the purpose of destroying the edifice; not by undermining, the most obvious way, but from the fanatic motive of defacing and destroying the sculpture by fire, which has been evidently applied to all. Accordingly we find the lower part of the ordonance or basement defaced, cracked and in many places ruined; and this operation here has particularly affected the two projecting parts on the East and West, in so much that nearly the whole has fallen down and exhibits the truer section of the whole wall and vault above, from top to bottom of their outward aisles, by which it appears that the roof within was carried up by stages of

square blocks placed over each other and projecting inwards in regular order.

The projections on the East and West ends are however entire, and we find they contain each a smaller Temple, which had no communication with the central or great Temple.—Although the walls are much cracked and defaced by the effects of the fire and of the voracious destructive Banian, yet enough remains to shew the beauty and chaste stile that decorated the original structure, the only part left in doubt being the crowning, which probably might be yet traced in the hot season, when the luxuriant foliage could more easily be removed.

On attentive examination we find the basement as usual in manner of a pedestal, with a series of fillets, ribbands and corner all plain—surmounted by the corps de l'edifice, which is terminated by a second series of fillets, &c. This corps de l'edifice has only one door in front, the South, and one at each end, East and West. On each side of these doors the middle space is occupied by a niche, in each of which a statue stood in stile and attitude resembling the figures of Mavelliporam, all bearing different objects apparently offerings rather than symbols—the

sides had also niches of the same kind, so that about twelve niches filled the space around.—The second story also appeared to have niches of lesser height, in two of which we could perceive small sitting naked Images, apparently of Jain. On either side of these niches the space was occupied by a series of pilasters and long divisions, filled with a running arabesque border of Roses ————— the niches were terminated by arches in what is usually, though evidently erroneously, called the Gothic stile—and above this the monstrous head with gaping mouth, tusks and staring eyes, which we find the constant ornament or rather symbol of these Temples, and which I have a strong suspicion has some symbolical meaning, as we find no other of the customary symbols of the Hindūs than that which I think is called the Yali, and that of the Gandarvas on another Temple. In this corps del' edifice in front south was the stair case Portico, of which only two side Arches remain, where the Temple was entered by a plain door of three feet; the body within was entirely cased with plain cut blocks of about nine inches high, devoid of all ornament whatever to the height of about thirty feet; from this square of twenty feet arose an eight sided vault of pyramidal

shape, formed as above, of exactly squared stone, of forty or forty-five feet in two stages. The whole may be computed at seventy feet from the pavement below. The roof is open above at present, and not closed like the generality of the small Temples, but whether it was originally so I am not able to say, though I am rather inclined to think it might have been designed to illuminate this immense cavity, which has no other light.

Fronting the door and the south is the great Altar, plainly terminated with a plain cornice, and at each end, where a flight of steps leads up, decorated with an Elephant's head on one stage, and that of a monster on the second. In this appendage of an Altar, the Temples we observe differ entirely from the Bramins, as well as in the want of Anti-sacellum. On the whole these general observations may be made, that simplicity, chastity of stile, and an aversion to superfluous ornament, distinguish the Rites and Temples of this religion, whatever it was. Here we find no paltry niches for stinking lamps, no soot or vestige of oil burning and soiling the interior.—No accumulation of doors, recesses, monstrous figures and obscene symbols.—All is Unity, Light and Truth.

The four lateral chapels or vaults were roofed in the same stile, but square, and without apertures above.

The Eastern chapel was equally plain ; had only one aperture, the door, fronting which was an Altar ; at each end an Arched niche plain and empty. On the floor we found two Images about two feet high, decapitated, but evidently from their nudity and sitting posture, intended to represent Jain.—One had a snake sculptured clinging round his arm—a peculiarity never before observed, probably indicating the purity and innocence of the represented.

On the outside, above the door, in a niche, is placed a sitting figure, naked, which appears rather like a female ; she holds a flower in one hand ; the right hand held up. On each side of the door, between the corner pilasters and door-way, is a niche arched at top, in the Gothic stile, within each of which stands a male figure much mutilated ; but still exhibiting evident proofs of elegance in the outline and execution ; the Head-dress long ; the drapery or costume light ; the attitude graceful, —something like a stand on one side—no war-like arms on any part of the building.

Following the building to the left, we passed to the front through a small Arch, which probably formed the third of this Portico, but the rest have given way and torn off the whole of the vault from the top, strewing the terrace and stair case with the ruins. The interior apartment has been described already.

The west end is of the same form and dimensions as the east.—The Temple here was empty.—Above the door a sitting Jain figure in a niche, but determinedly male—statues on either side of the door in the niche—that on the right holding a flower in one hand—the marks of the fire very evident on the corner of the base.

The west front shews the same order as the east—the anti-apartment torn away shews the roof and vault. There being no door to the interior here, the space is occupied by a compartment, in which a grand vase is seen with flowers and leaves from its mouth overshadowing the sides. Two small Jain sitting figures are seen in the niches above in the second story.

The Crowning or top of the whole is ruinous, and the fall of the two south and north projecting parts have also taken away much of the outer coating with them; the overgrowth of the Banian also shading it, hinders its true



shape from being known, and it is really very curious to observe how this tree has penetrated between the minutest junctions of the stone, and has gradually sapped and entwined the whole; pressing closely from without against some parts of the wall, then disappearing, and suddenly afterwards it is seen in various forms, sometimes like a rope, sometimes like a knotted branch, communicating silently and secretly the infection to every part, till at last we find it overtopping the whole, proudly viewing the magnificent ruin it has helped to form, and as in pity embracing and clinging about the beauteous and venerable ruin of former grace, preserving it yet a little longer, a few centuries, from irretrievable destruction.—Like a secret foe, insidiously decorating the beauty it is working to destroy, and apparently reluctant to complete the work, in smiles surveying the ruin it has made.

I now retraced my steps and turned off to another ruinous edifice, which on inspection appeared to be in better preservation than any of the other edifices. In fact I could here find nothing to induce me to suppose it was a Temple (see the description of it the following day.)

Ten steps lead up to the only door-way, which is in front—at the bottom of the door-posts were two good representations of Elephants with square umbaries; over the hinder part of the Elephant a man leans with his face directly towards you, apparently asleep, but holding somewhat—by these steps we passed into the interior, which consists of one central and two side chambers, neatly faced with cut plain stones, and surmounted above by a plain cut alcove or pyramidal roof of cut stone; on either side a door leads to each room, which is arched, but at top terminated by a flat stone.—These rooms had no Altars, Images or indications of religious worship being performed in them. It would seem as if rafters had been used or designed, from the vacancies left in the freize or above the cornice, and some of the spaces within are occupied by niches answering to the apertures of doors, windows, &c. (see plan.)

#### JANUARY 21.

In the morning Mr. Knops and myself visited some Javanese Tombs or Kramats—they are surrounded by an old wall and well shaded; these Tombs, which are frequent, have nothing remarkable, they are marked by a wooden frame above ground, consisting of four

pieces morticed into each other, and usually further distinguished by two small wooden posts, one at each end, without letters or inscriptions. Hence we were conducted to the fountain that forms the source of the Cali Binny river, lying north of the road about one quarter of a mile, and close to the residence of some person, for it is difficult here to distinguish a village, as they are all formed of bamboo huts, yards and inclosures—close to this we saw the water gushing out of a hollow bason formed in the steep face of a rising of sand stone; it forms a limpid pool of such clearness that the least particle may be seen through it; an ornamented sculptured stone on each side, placed amongst several rude stones, seemed to indicate it had been formerly thought worthy of ornaments no longer preserved.

In the evening I went with the Draftsman to take some sketches and complete my observations on the objects we had seen yesterday on the south west road, but as it grew late I hastened to that of Cali Sari, which is close to the Nigri near the road, and which had not yet been sufficiently examined.

On close inspection it appears to consist of one oblong square edifice, without wings or

Piazzas, and being in much better preservation than the rest, I was enabled to form a clearer idea of it, though it is much disfigured by the growth of the Banian, and the fire that has been applied to its base.—It appears to have stood in a square Area, inclosed by a wall, and certainly resembles a house more than a Temple.

The Draftsman with some difficulty had time to sketch off the general outline, but could not to my satisfaction, in the dark, take off the outline of two elegant female figures on its south end holding Tulips.

The base is ornamented with a pedestal, and the body is divided into compartments by one door and two windows (see No     ) between these are ornamented pilasters, with niches between, containing sculptured figures carved in the finest attitude, over the crown of which are two ornamented Yalies with hideous stare—the same at the ends—and on the west side, for it fronts the east, the compartment answering to the door in the east, is adorned with a great urn guarded by small figures (Gandarvas) with the legs of Eagles; one of them seems to kiss his thumb, which is placed to his lips in devotion—the attitude, sculptures and high crowns of these figures resemble those of Ma-

velliporam greatly, but no Braminical symbols are discernible; some figures seemed to bear on their hands something like a half cocoanut, and each evidently appeared to hold something expressive of awe and veneration; another holds a pot in his right hand, and a very elegant figure, adorned with exceedingly well defined rows of Pearls falling carelessly below his breast, bears a Tulip in his hand. The attitudes of the whole are most elegant.

The evening fair; Peak of Merapi clear in the morning; at 5 p. m. hid in clouds, but still fair—in returning, though late, caused sketches to be taken of the outline of the Jain and other naked figures.

At 7 p. m. I returned to the Chinaman's, fatigued though pleased, but by no means satisfied; but it was necessary we should now prepare seriously for departure, as the Battors might no longer be retained, and my Lascar was getting very ill of a dysentery.

We now sat down to our evening meal, and while my companion was investigating, through the medium of a Chinese Translator, the tradition of Lorajongra, and the building of the nine hundred and ninety nine Temples of Cali Sari, I sat down to own the receipt of an express

from the Minister of Djojocarta, which inclosed with four citos, his own answer of the 14th to mine of the 11th, sent to Samarang in place of Solo, and returned back by express on the 17th by Sooracarta past Clattan, and so to Djojocarta, and now on the rebound reached us at last. In my answer I declined visiting Djojocarta, as it was now too late.

The walls of this edifice at Cali Sari are seven feet thick; the centre apartment twenty one feet by nineteen. The two stories, estimated by the stones, thirty six feet, and the upper crown or attick about twelve—Total forty eight feet in heighth. The whole seems to have one of those Ditches round it that I have described, and so close to the buildings that it could never have been designed for their security, but rather for their destruction.

Of these figures in general it may be observed, that the faces, shape and air of the females are singularly handsome, delicate and beautiful; in no manner resembling the Physiognomy, habits or costume of any of the present Inhabitants of Java—the whole is most beautiful; an inimitable softness in the lines of the countenance, and the half bending inclination of the head, the mild, the modest countenance, inclining with

a bashful timidity, while the body and limbs are advancing in movement, has a fine effect; the light Drapery and Trowsers may be traced over the limbs to the ankles; the girdles tied in knots, gracefully flowing considerably below the waist — The manner in which the Trowsers are wrought so lightly, that the shape of the limb is fully delineated, particularly exhibited the skill of the artists — the habits certainly are not Grecian — the female countenance particularly modest, and apparently with awe looking to some object of veneration, though the only one perceptible is the urn in the center compartment. The head-dress high and none of the hair appears falling down. It is to be regretted that most of these figures are fractured and damaged, but enough remains to shew the original beauty of the whole. The ornaments are necklaces and armlets. The north side is more complete, and this Temple or edifice is in the greatest preservation of the whole. The more we view these figures, the more we are puzzled to guess whence the sculptors could derive their knowledge of this art. It is to be much regretted that the Banian tree has insinuated itself into them all, and threatens in time to sap and destroy the whole. At times a simple

piece, like a part of a cable, is seen appearing and disappearing, and finally we find it, after working up through the whole edifice, throwing a branch which runs over the whole edifice, and shading the crown, with its numerous leaves, from all view or inspection of its shape.

It was not without reluctance I left these interesting ruins ; and while I was surveying them with mixed emotions of regret and pleasure, it was impossible to forbear ruminating on the origin of edifices, so widely different in their stile from what we are taught to expect in these countries at a remote Era, and so widely different from their present state. As it may perhaps assist some future enquirer, it may not be amiss here to notice some general remarks that occur on this subject.

1.—The walls of all these buildings have been built without any natural cement, mortar, bricks or any of that rubbish that is usually employed to fill up the interior of walls.

2.—The stones appear to have been previously cut and fitted to each other, perhaps in the quarry, connected by small projections, morticed into the adjacent stone. The stones are dark-colored, excepting the whitish stone observed in the southern Temple.



3.—As in the western Temple of Cali Sari, the whole of the outside walls, sculptured figures and pedestals have been covered with a thin coat of fine plaister, the inside apartments also of the edifice at Chandi Sari have been plaistered in this manner.

4.—The pointed Arch, called the Gothic, is found at the Temples of Chandi Siva, Chandi Sari, &c. and the south Temple (see No. )

5.—The resemblance of the great Altars to those of Christian Churches is striking (see No. )

6.—The inexpressible delicate mild air, the symmetry, the grace, the proportion of the sculpture is remarkable—they certainly seem to have some resemblance to some of the figures at Mavellipooram and to some Images at Ellora.

7.—Recollecting the tradition of a colony from Guzerat, might not a King be found there, or might not a search in the ruins of Nerwalla, or some of the ruined cities in Guzerat or Dwaraka, &c. be elucidating?

8.—Recollecting the tradition of the Marashtra or Moodhi characters coming from Lanka—the resemblance stated of the Javanese, the Moodhi and Devanagri characters, might not some light be derived from a comparison of

Guzerat, Marashtra and Javanese characters and sculptures ?

9.—The stile of architecture of the Temple resembles also those of Bednore and of Jakan Achari—it should be recollected that a colony from Dwaraka is there also recognized—the great urn is also an accompaniment.

10.—In these remarks I have not taken into the account the presence of several Images evidently Jain ; but it is to be remarked they are all sitting—none standing are met with, nor any gigantic images, as at Sravana Bellagolla, Carcul &c. but Dr. Hunter assures me he has heard of a gigantic statue in the province of Cadiri.

11.—On the other hand, though some Images appear evidently Boudhist, and though tradition supports it, we yet find no evidence of the Boudh worship exclusively, nor that derivable from the gigantic figures recumbent in the Temples of Ceylon, &c. That we find no historical figures or representations of groupes is equally applicable to the worship of Boudh and of Jain ; evidently the religion observed here, whatever it was, was less burthened with fictitious symbols than either of them in the state they are hitherto known—*Query*—Are we yet sufficiently acquainted with their distinction and

those of Sintu in Japan—and may not Sintu have some resemblance to Jain?

12.—It is particularly to be observed that no symbols of Vedantic mythology appear at Brambana, save the Image of Gajaputty and of Embok Loro Jongrang or Bovani—perhaps the Janus and the Cybele.

13.—No symbols of Sewan, no combats nor adventures of Kishen, no Linnam, no Bull, nor wandering of Sewo, no Saniasees, no Chacra, no Snake worship—no Sculptures whatever connected with the present Hindū mythology, the above excepted, and perhaps the figures of Monkeys, which seem to resemble some of the adventures of the Ramayun, where Hanamunt and his brother Apes traverse the forests in quest of Sita—this undoubtedly did belong to the ancient Temple.

14.—On the whole it is evident that most of the Temples here did not belong to the Vedantic mythology—the inside of the Temples of the Aditum also prove it, as they are not soiled by those disagreeable effects of oil and smoke that pollute the Bramin Temples—no stinking lamp appears to have been burnt in them; nor have they even those small niches that usually

decorate the inner doors to receive the lamps on festival nights.

15.—The Bramin religion, however, seems to have had its Temples in other places, as at Oonarang, where we find three Temples near the Crattan; and at Salatiga, Buyalali and Solo, where numerous Images of stone and metal indicate its prevalence. It is remarkable that the Images of Ganesha are not accompanied by the Rat—and the number of Images of Ganesha and of Bavani under one representation is equally remarkable.

16.—Of the evidence derived from architecture, sculpture, &c. we may notice that no figures of Lions are ever seen—of Elephants seldom—of Tygers but once—the frequency of the Arabesque Borders and of Roses—the frequent exhibition of the Lotus or Tulip well carved.

17.—No evidence of Snake worship was observed among these ruins, such as we meet in India, frequently sculptured on stones placed around the foot of a great tree, yet the word Naga is preserved; see the Tradition of Embok Loro Jougrang. The appearance of a Snake winding round the arms of some of the gigantic Porters was also remarkable.

JANUARY 22.

We were to have proceeded at 4 A. M. but we had slept so well after our fatigues that it was six before we started, and our baggage had scarcely preceded us half an hour; we also remained somewhat longer to get a litter made up for a Madras Lascar that attended me, who had been so violently attacked by a bloody-flux that it was impossible for him to ride; we got two of the Battors prevailed on to carry him in this awkward conveyance, or I should have been much at a loss to have got him off from the Sultan's inhospitable domain. The morning was heavy and calm. The Mirapi peak was extremely clear at seven, and from its summit two or three columns of smoke were distinctly visible; a bank of Fog clung around the brow of the mountain one third down, which as the Sun arose, gradually ascended, increasing its compass till about twelve, when it had entirely veiled the mountain.

The Road as far as Clattan was tolerably dry, and we walked a good part of it, till interrupted by the channels cut across from one field to another. In these fields, all the varieties of Paddy cultivation, except sowing, might be seen in a short compass; tillage, planting, transplanting,

reaping or rather picking each sheaf, one by one; the whole of this was done by women, who also exclusively officiate in the Booths on each side of the roads, where Tea, Coffee, Rice boiled in heaps, soups, vegetables, fruit, nuts, betel, the eternal Tobacco and the never failing Opium are prepared ready for the nourishment, comfort, or intoxication of the weary traveller; men, women, and children, riding pigmy horses, Batters carrying Baskets on cross Bamboos, Troops of Cavalry in hoods, surmounted by long white French Feathers, hoods which Mother Goose would not disdain to wear, diminutive Javan Heroes, dressed in women's petti-coats below the waist and naked above, bearing tremendous pikes, swords, guns, crisses sticking out a yard behind, these were the objects which constantly pressed on our notice as we trudged along the tedious way.

About nine we arrived at Fort Clattan, where we hastily took some Tea; had not our business hurried us on, we could not have been encouraged to remain, notwithstanding the hospitality of the three Officers there, who, poor fellows themselves, were not very comfortably situated.

We arrived at Pakhus about 2 p. m. where our baggage had just arrived, but there being

no time for preparing a warm dinner as intended, we partook some of cold meat and the Chinaman's Lilliputian Tea cups, and departed at one quarter before three—the road from hence to Carta-soora was still deep, the soil being of a softer and more tenacious clay, and, though much dried up since we past it on the 19th, was still deep in many places; but especially the green height crossed in our way to the junction of the road at Carta-soora, which is a black mould producing no corn, and the very worst part of the road I had ever crossed, so deep, tenacious and clammy. To the right a Tank, bordered by an embankment and planted with trees, a feeble recollection of the Tanks of the Carnatic, and a Bungalo on a small Island, in place of the Temples we there see in such insular situations. I hoped to have examined this prototype of a Country ever dear to me, in viewing the ruins of Carta-soora, but was disappointed; for though we got out of our conveyance and were conducted through many a desolate brick walled Court, within the inclosure of the brick rampart of the ancient Dallam, I found so little prospect of reaching in time this favorite spot, that I returned disgusted, tired and disappointed.





X.

---

AN ESSAY

ON THE OOPAS

OR

POISON TREE OF JAVA,

ADDRESSED TO THE HONORABLE

THOMAS STAMFORD RAFFLES

LIEUTENANT GOVERNOR.

---

BY THOMAS HORSFIELD, M. D.

---

COMMUNICATED TO THE SOCIETY BY THE PRESIDENT.

---

I HAVE proposed to myself in the following Essay, to offer you a short account of the Oopas of Java. I feel some satisfaction in being able, at a time when every subject relating to this Island has acquired a degree of interest, to furnish you with a faithful description of the tree, made by myself on the spot where it grows, and to relate its effects on the animal system by experiments personally instituted and superintended; and I flatter myself that the practical informa-

tion detailed in the following sheets, will refute the falsehoods that have been published concerning this subject, at the same time that it will remove the uncertainty in which it has been enveloped.

The literary and scientific world has in few instances been more grossly and impudently imposed upon than by the account of the *Pohon Oopas*, published in Holland about the year 1780. The history and origin of this celebrated forgery still remains a mystery. *Foersch*, who put his name to the Publication, certainly was (according to information I have received from creditable persons who have long resided on the Island) a Surgeon in the Dutch East India Company's service, about the time the account of the Oopas appeared.\* It would be in some degree interesting to become acquainted with his character. I have been led to suppose that his literary abilities were as mean as his contempt of truth was consummate.

Having hastily picked up some vague information concerning the Oopas, he carried it to Europe, where his notes were arranged, doubtless

---

\* *Foersch* was a Surgeon of the third class at Samarang in the year 1773. His account of the Oopas Tree appeared in 1783.

by a different hand, in such a form, as by their plausibility and appearance of truth, to be generally credited.

It is in no small degree surprizing that so palpable a falsehood should have been asserted with so much boldness and have remained so long without refutation—or that a subject of a nature so curious and so easily investigated, relating to its principal Colony, should not have been enquired into and corrected by the naturalists of the Mother Country.

To a person in any degree acquainted with the Geography of the Island, with the manners of the Princes of Java, and their relation to the Dutch Government at that period, or with its internal history during the last 50 years, the first glance at the account of *Foersch* must have evinced its falsity and misrepresentation. Long after it had been promulgated, and published in the different Public Journals in most of the languages of Europe, a statement of facts, amounting to a refutation of this account, was published in one of the volumes of the Transactions of the Batavian Society, or in one of its prefatory addresses. But not having the work at hand, I cannot with certainty refer to it, nor shall I enter into a regular examination and re-

futation of the Publication of *Foersch*, which is too contemptible to merit such attention.

But though the account just mentioned, in so far as relates to the situation of the Poison Tree, to its effects on the surrounding country, and to the application said to have been made of the Oopas on criminals in different parts of the Island, as well as the description of the Poisonous substance itself, and its mode of collection, has been demonstrated to be an extravagant forgery,—the existence of a tree on Java, from whose sap a Poison is prepared, equal in fatality, when thrown into the circulation, to the strongest animal Poisons hitherto known, is a fact, which it is at present my object to establish and to illustrate.

The tree which produces this Poison is called *Antshar*, and grows in the Eastern extremity of the Island. Before I proceed to the description of it and of the effects produced by this Poison, I must premise a few remarks on the history of its more accurate investigation, and on the circumstances which have lately contributed to bring a faithful account of this subject before the public.

At the time I was prosecuting my enquiries into the Botany and Natural History of the

Island on behalf of the Dutch Government, *Mr. Leschenault de La Tour*, a French Naturalist, was making a private collection of objects of Natural History for the Governor of the North East Coast of Java. He shortly preceded me in my visit to the Eastern Districts of the Island, and while I was on my route from Sourabaya in that direction, I received from him a communication containing an account of the Poison Tree as he found it in the province of Blambangan. I am induced to make this statement, in order to concede, as far as regards myself, to *Mr. Leschenault de La Tour*, in the fullest manner, the priority in observing the Oopas of Java. I do this to prevent any reflection, in case a claim to the discovery should be made at a future period: but I must be permitted to add in justice to the series of enquiries which engaged me and the manner in which they were carried on, that the knowledge of the existence of this tree was by no means uncommon or secret in the District of Blambangan, in the environs of Banyoo-wangee; that the Commandant of the place, a man of some curiosity and enquiry, was acquainted with it, and that it could not (in all probability) have escaped the notice of a person, who made the vegetable productions an object of particular

enquiry, and noted with minute attention every thing that related to their history and operation.

It is in fact more surprizing that a subject of so much notoriety in the District of Blambangan, and of so great celebrity and misrepresentation in every other part of the world, should so long have remained unexplored, than that it should finally have been noticed and described; and since my visit to that Province I have more than once remarked the coincidence which led two persons of nations different from each other, and from that which has been long in possession of the Island, who commenced their enquiries without any previous communication and with different objects in view, within the period of about six months, to visit and examine the Oopas Tree of Java.

The work of Rumphuis contains a long account of the Oopas under the denomination of *Arboo Toxicaria*; the tree does not grow on Amboina, and his description was made from the information he obtained from Macassar.

His figure was drawn from a branch of that which was called the male tree, sent to him from the same Place, and established the identity of the Poison Tree of Macassar and the other Eastern Islands with the *Antshar* of Java.

The account of this author is too extensive to be abridged in this place, it concentrates all that has till lately been published on this subject; but the relation is mixed with many assertions and remarks of a fabulous nature, and it is highly probable that it was consulted in the fabrication of Foersch's story. It is, however, highly interesting, as it gives an account of the effects of the poisoned darts, formerly employed in the wars of the Eastern Islands, on the human system, and of the remedies by which their effect was counteracted and cured.

The simple sap of the Arbor Toxicaria (according to Rumphuis) is harmless, and requires the addition of ginger and several substances analogous to it, such as Ledoory and Lampoegang, to render it active and mortal. In so far it agrees with the Antshar, which in its simple state is supposed to be inert, and before being used as a Poison, is subjected to a preparation which will be described after the history of the tree. The same effervescence and boiling which occurs on the mixture of the substances added to the milky juice by the Javanese in Blambangan, has been observed in the preparation of the Poison of Macassar, and in proportion

to the violence of these effects the Poison is supposed to be active.

A Dissertation has been published by Chrisp : Aejmlæus at Upsal, which contains the substance of the account of Rumphuis ; an extract from it is given in Dr. Duncan's Medic : Comment : for the year 1790, 2d vol. Vth. Decad.

It appears from the account of Rumphuis that this tree is also found on Borneo, Sumatra and Bali.

Besides the true Poison Tree, the Oopas of the Eastern Islands and the Antshar of the Javanese, this Island produces a shrub, which, as far as observations have hitherto been made, is peculiar to the same, and by a different mode of preparation, furnishes a Poison far exceeding the Oopas in violence—Its name is *Tshettik*, and its specific description will succeed to that of the Antshar—The genus has not yet been discovered or described.

#### DESCRIPTION OF THE ANTSHAR.

The *Antshar* belongs to the twenty first class of Linnæus, the Monoecia—The male and female flowers are produced in catkins ( Amenta ) on the same branch, at no great distance from each other—the female flowers are in general above the male.



The characters of the genus are ;

**MALE-FLOWER**—*Calix* consisting of several scales, which are imbricate.

*Corol* none—*Stamens* Filaments many, very short, covered by the scales of the receptacle-anthers.

The receptacle on which the Filaments are placed, has a conical form, abrupt, somewhat rounded above.

**FEMALE-FLOWER**—Catkins ovate, *Calix* consisting of a number of imbricate scales (generally more than in the male) containing one flower.

*Corol*, none.

*Pistil*—Germ single, ovate, erect, *Styles* two, long, slender, spreading, *Stigmas* simple, acute.

*Seed-vessel*, an oblong drupe, covered with the calix.

*Seed*, an ovate nut with one cell.

#### SPECIFIC DESCRIPTION.

The Antshar is one of the largest trees in the Forest of Java. The stem is cylindrical, perpendicular, and rises completely naked to the height of sixty, seventy or eighty feet.—Near the surface of the ground it spreads obliquely, dividing into numerous broad appendages or wings, much like the *Canarium commune* and

several others of our large Forest trees. It is covered with a whitish bark, slightly bursting in longitudinal furrows: near the ground this bark is, in old trees, more than half an inch thick, and, upon being wounded, yields plentifully the milky juice from which the celebrated poison is prepared. A puncture or incision being made in the tree, the juice or sap appears oozing out, of a yellowish colour; (somewhat frothy) from old trees, paler; and nearly white from young ones: when exposed to the air its surface becomes brown. The consistence very much resembles milk, only it is thicker, and viscid. This sap is contained in the true bark (or cortex) which when punctured, yields a considerable quantity, so that in a short time a cup full may be collected from a large tree. The inner bark (or liber) is of a close fibrous texture, like that of the *morus papyrifera*, and when separated from the other bark, and cleansed from the adhering particles, resembles a coarse piece of linen. It has been worked into ropes which are very strong, and the poorer class of people employ the inner bark of younger trees, which is more easily prepared, for the purpose of making a coarse stuff which they wear when working in the fields. But it requires much bruising,

washing, and a long immersion in water before it can be used, and even when it appears completely purified, persons wearing this dress, on being exposed to the rain, are affected with an intolerable itching, which renders their flimsy covering almost insupportable.

It will appear from the account of the manner in which the poison is prepared, that the deleterious quality exists in the Gum, a small portion of which still adhering to the bark, produces when it becomes wet, this irritating effect, and it is singular that this property of the prepared bark is known to the Javanese in all places where the tree grows (for instance in various parts of the Provinces of Bangil and Malang, and even at Onarang) while the preparation of a poison from its juice, which produces a mortal effect when introduced into the body by pointed weapons, is an exclusive art of the Inhabitants of the Eastern extremity of the Island.

One of the Regents in the Eastern districts informed me, that having many years ago, prepared caps or bonnets from the inner bark of the Antshar, which were stiffened in the usual manner with thick rice water, and handsomely painted, for the purpose of decorating his Mantries, they all decidedly refused to wear them,

asserting that it would cause their hair to fall out.

The stem of the Antshar having arrived at the beforementioned height, sends off a few stout branches, which spreading nearly horizontally with several irregular curves, divide into smaller branches and form a hemispherical, but not very regular crown. The external branches are short, have several unequal bends, and are covered with a brown bark.

The leaves are alternate, oblong, heart shaped, somewhat narrower towards the base, entire, with a waving or undulated margin, which sometimes has a few irregular sinuosities. The longitudinal nerve divides the leaf somewhat obliquely, and the inferior division is generally the larger. The point is irregular, some are rounded at the end, others run off almost abruptly to a short point. The upper surface is shining and nearly smooth: some widely dispersed short villi are observed on it; the inferior surface is lightly rough, reticulated, and marked with oblique-parallel veins. The petiole is short. The flowers are produced towards the extremity of the outer branches, in a few scattered catkins—the common peduncle of the males is slender and long, that of the females is shorter.

Previous to the season of flowering, about the beginning of June, the tree sheds its leaves, which re-appear when the male flowers have completed the office of fecundation. It delights in a fertile and not very elevated soil, and is only found in the largest Forests. I first met with it (the Antshar) in the Province of Poegar on my way to Banjoowangee; in the province of Blambangan I visited four or five different trees, from which this description has been made, while two of them furnished the juice for the preparation of the Oopas.—The largest of these trees had, where the oblique appendages of the stem entered the ground, a diameter of at least ten feet, and where the regularly round and straight stem began, the extent of at least ten feet between the points of two opposite appendages at the surface of the ground, its diameter was full three feet. I have since found a very tall tree in Passooroowang, near the boundary of Malang, and very lately I have discovered several young trees in the Forests of Japara, and one tree in the vicinity of Onarang. In all these places, though the Inhabitants are unacquainted with the preparation and effect of the poison, they distinguish the tree by the name of Antshar. From the tree I found in the Province of Passooroo-

wang I collected some juice, which was nearly equal in its operation to that of Blambagan. One of the experiments to be related below was made with the Oopas prepared by myself, after my return to the chief village. I had some difficulty in inducing the Inhabitants to assist me in collecting the juice, as they feared a cutaneous eruption and inflammation, resembling, according to the account they gave of it, that produced by the Ingas of this Island, the *Rhus vernix* of Japan, and the *Rhus radicans* of North America: but they were only affected by a slight heat and itching of the eyes. In clearing the new grounds in the environs of Banjoowangie for cultivation, it is with much difficulty the inhabitants can be made to approach the tree, as they dread the cutaneous eruption which it is known to produce when newly cut down. But except when the tree is largely wounded, or when it is felled, by which a large portion of the juice is disengaged, the effluvia of which mixing with the atmosphere, affect the persons exposed to it, with the symptoms just mentioned, the tree may be approached and ascended like the other common trees in the forests.

The Antshar, like the trees in its neighbourhood, is on all sides surrounded by shrubs and plants; in no instance have I observed the ground naked or barren in its immediate circumference.

The largest tree I met with in Blambangan was so closely environed by the common trees and shrubs of the forest in which it grew, that it was with difficulty I could approach it.—Several vines and climbing shrubs, in complete health and vigour, adhered to it and ascended to nearly half its height. And at the time I visited the tree and collected the juice, I was forcibly struck with the egregious misrepresentation of Foersch.—Several young trees spontaneously sprung from seeds that had fallen from the parent, reminded me of a line in Darwin's Botanic Garden, "Chained at his root two scion Demons dwell"—While in re-calling his beautiful description of the Oopas, my vicinity to the tree gave me reason to rejoice that it is founded on fiction.—The wood of the Antshar is white, *light and of a spongy appearance.*

#### DESCRIPTION OF THE TSHITTIK.

The fructification of the Tshittik is still unknown; after all possible research in the

district where it grows, I have not been able to find it in a flowering state.—It is a large winding shrub.

The root extends creeping to a considerable distance, parallel to the surface of the earth, sending off small fibres at different curves, while the main root strikes perpendicularly into the ground.

In large individuals it has a diameter of two or three inches; it is covered with a reddish brown bark, containing a juice of the same colour, of a peculiar pungent, and somewhat nauseous odour.

From this bark the poison is prepared.

The stem, which in general is shrubby, sometimes acquires the size of a small tree; it is very irregular in its ascent and distribution: having made several large bends near the surface of the earth it divides (at long intervals) into numerous branches, which attach themselves to the neighbouring objects and pursue a winding course, at no great distance from the ground and nearly parallel to it.—In some instances the stem rises and ascends to the top of large trees; its form is completely cylindrical, and it is covered with a grey spotted bark.



The lesser branches arise from the stem in pairs (opposite) and are very long, slender, cylindrical, divergent, or spreading, and covered with a smooth grey shining bark; on these the leaves are placed opposite, in single pairs or on a common footstalk, pinnate in two or three pairs; they are egged, spear-shaped, entire, terminating in a long narrow point, completely smooth and shining on the upper surface, with a few parallel veins beneath.—The petioles are short and somewhat curved.—Towards their extremity the shoots produce Cirrhi or Tendrils, which appear without any regular distribution opposite to the leaflets; and some branches are entirely without them: they are about an inch long, slender, compressed and spirally turned back (*recurvati*) at the end near their base a small stipula is found.

The Tshettik grows only in close, shady, almost inaccessible forests, in a deep, black, fertile, vegetable mould. It is very rarely met with, even in the wildernesses of Blambangan.

*Preparation 1st, of the Antshar.*—This process was performed for me by an old Javanese, who was celebrated for his superior skill in preparing the poison. About eight ounces of the juice of the Antshar, which had been collected

the preceding evening in the usual manner, and preserved in the joint of a bamboo, was carefully strained into a bowl. The sap of the following substances, which had been finely grated and bruised, was carefully expressed and poured into it, viz. Arum, Nampoo (Javanese) Kaemferia Galanga, Kontshur, Amomum Bengley, (a variety of Zerumbed) common onion and garlic, of each about half a dram; the same quantity of finely powdered black pepper was then added, and the mixture stirred.

The preparer now took an entire fruit of the *Capsicum fruticosum* or Guinea Pepper, and having opened it, he carefully separated a single seed, and placed it on the fluid in the middle of the bowl.

The seed immediately began to reel round rapidly, now forming a regular circle, then darting towards the margin of the cup, with a perceptible commotion on the surface of the liquor, which continued about one minute. Being completely at rest, the same quantity of pepper was again added, and another seed of the *Capsicum* laid on as before: a similar commotion took place in the fluid, but in a less degree, and the seed was carried round with diminished rapidi-

ty. The addition of the same quantity of pepper was repeated a third time, when a seed of the Capsicum being carefully placed in the centre of the fluid, remained quiet, forming a regular circle about itself, in the fluid, resembling the halo of the moon. This is considered as a sign that the preparation of the poison is complete.

The dried milk of the Antshar having been preserved close a considerable time, can still be prepared and rendered active. A quantity which I had collected about two months before, was treated in the following manner by the same person who prepared the fresh juice. Being infused in as much hot-water as was barely sufficient well to dissolve it, it was carefully stirred till all the particles soluble in water were taken up; a coagulum of Resin remained undissolved; this was taken out and thrown away. The liquor was now treated with the spices abovementioned, the pepper and the seed of the Capsicum, in the same manner as the fresh juice. The same whirling motion occurred as above described on the seed being placed in the center. Its activity will appear from one of the experiments to be related.

2d, *Of the Tshettik*.—The bark of the root is carefully separated, and cleared of all the ad-

herent earth; a proportionate quantity of water is poured on, and it is boiled about an hour, when the fluid is carefully filtered through a white cloth;—it is then exposed to the fire again and boiled down to nearly the consistence of an extract; in this state it much resembles a thick syrop. The following Spices having been prepared as above described, are added in the same proportion as to the Antshar, viz. *Kaempferia Galanga*, (*Kontshur*,) *Soonty*, &c. *Dshey*, for common *Onion*, *Garlic*, and *black Pepper*.

The expressed juice of these is poured into the vessel, which is once more exposed to the fire a few minutes, when the preparation is complete. The Oopas of both kinds must be preserved in very close vessels.

## EXPERIMENTS.

### 1. *With the Antshar.*

#### EXPERIMENT I.

A dog of middling size was wounded in the muscles of the thigh with an arrow that had been immersed into the newly prepared Oopas, and had been exposed to the air one night.

In 3 minutes he seemed uneasy, he trembled and had occasional twitchings, his hair stood

erect, he discharged the contents of his bowels. An attempt was made to oblige him to walk but he could with difficulty support himself.

In 8 minutes he began to tremble violently, the twitching continued and his breathing was hasty.

In 12 minutes he extended his tongue and licked his jaws, he soon made an attempt to vomit.

In 13 minutes he had violent contractions of the abdominal and pectoral muscles, followed by vomiting of a yellowish fluid.

In 15 minutes the vomiting recurred.

In 16 minutes, almost unable to support himself, with violent contraction of the abdominal muscles.

In 17 minutes he threw himself on the ground, his respiration was laborious, and he vomited a frothy matter.

In 19 minutes violent retching, with interrupted discharge of a frothy substance from his stomach.

In 21 minutes he had spasms of the pectoral and abdominal muscles, his breathing was very laborious, and the frothy vomiting continued.

In 24 minutes in apparent agony, turning and twisting himself, rising up and lying down, throwing up froth.

In 25 minutes he fell down suddenly, streamed, extended his extremities convulsed, discharged his excrement, the froth falling from his mouth. On the 26th minute he died.

*Dissection.*—The abdomen being opened about 5 minutes after death, a small quantity of a serous fluid was found in the cavity; the liver, intestines and other viscera were natural. —In the stomach a yellowish frothy mucilage was found adhering to the internal coat, which was contracted into wrinkles.

In the thorax the lungs were of an elegant florid colour, and gorged with blood, the pulmonary vessels exhibiting through their coats a florid sanguinary fluid: on puncturing the ascending aërta the blood gushed out of a florid colour.

In the venæ cavæ the blood was of the usual dark hue, and on puncture flowed out forcibly. The muscles of the extremities were remarkably pale: on tracing the wound, it was found inflamed, and in two places along its course a small quantity of blood was found effused between the muscle and tendon.

## EXPERIMENT II.

A Dog about four months old was pricked in the muscles of the thigh with the Oopas that had been prepared from the juice I collected in Poegar—the Poison had remained on the arrow about 48 hours.

In 3 minutes he began to tremble and the wounded limb shook more considerably—he soon began to droop, hung his head, and extending his tongue, licked his jaws.

In 4 minutes he began to retch; on the 8th minute he vomited, with violent and painful contraction of the pectoral and abdominal muscles, which agitated his whole frame.

In 9 minutes he vomited again with convulsive violence—the secretion of saliva was much increased, he stretched out his fore-legs as if he could with difficulty support himself, his head hanging to the ground—his breathing was slow and laborious.

In 11 minutes he threw up frothy matter with violent contraction of the abdominal and pectoral muscles, and throwing himself on the ground, cried out violently.

In 12 minutes the vomiting returned, he cried more violently, was seized with convulsions, extended his extremities, and on the 13th minute he died.

On *Dissection* a small quantity of serum was found in the abdomen. The intestines were natural, the Liver was much distended with blood as also the vessels of the kidneys.

The stomach still contained some aliment.

In the Thorax the lungs were of a beautiful crimson colour and the vessels strongly distended; on puncturing the aërta the blood bounded out forcibly of an elegant florid colour; collected in a cup it soon coagulated; from the venæ cavæ the blood also sprung out forcibly of a dark livid colour.

The vessels on the surface of the brain were more than naturally injected with blood—as were the longitudinal and frontal sinuses. The wound was as in the last instance.

### EXPERIMENT III.

An animal called Gendoo by the Javanese (the Lemur volans of Linnæus) was pricked in the cavity of the ear with a mixture of the simple unprepared fresh juice of Antshar, with a little extract of Tobacco. It felt the effects



very soon, and during the first minutes it was very restless, on the 5th minute it became drooping.

In 10 minutes it was convulsed, and soon became motionless and apparently insensible.

On the 20th minute it died.

It must be remarked that this animal is uncommonly tenacious of life.

In attempting to kill it for the purpose of preparing and stuffing, it has more than once resisted a violent strangulation full 15 minutes.

#### EXPERIMENT IV.

A young *Lutra* (Welinsang of the Javanese) was punctured near the Anus in the muscles of the abdomen, with the simple fresh juice of the Antshar, mixed with a little extract of Stramonium; very soon after the puncture the animal became restless, and holding it in my hand, I could perceive convulsive twitchings of the muscles.

In 15 minutes it began to retch, had an increased flow of saliva and extended the tongue: the abdominal muscles acted violently, and at intervals were strongly contracted about the pelvis.

In 20 minutes it was convulsed, very restless during the intervals and made repeated efforts to vomit without throwing up any thing: the convulsions increased in frequency and violence until the 25th minute, when the animal died.

#### EXPERIMENT V.

A small Dog was wounded in the usual manner in the muscles of the thigh with the simple unprepared milk of the Antshar.

From the moment of the puncture he continued barking and screaming incessantly 8 minutes; he now extended his tongue, licked his jaws, was seized with twitchings of the extremities and with contractions of the abdominal muscles, and discharged the contents of his bowels.

On the 10th minute he sprung up suddenly and barked violently, but soon became exhausted and laid down quietly on the ground.

On the 12th minute he fell prostrate, was convulsed, after which having remained apparently motionless one minute, the convulsions recurred with greater force; on the 14th minute he died.

*On dissection* all the vessels in the Thorax were found excessively distended with blood.

In the abdomen the stomach was almost empty, but distended with air and its internal coat covered with froth. The vessels of the liver were gorged with blood.

#### EXPERIMENT VI.

A bird of the genus *Ardea*, somewhat smaller than a fowl, was wounded in the muscles of the abdomen with a dart covered with the unprepared milk of the Antshar.

On the 6th minute after the puncture it died without exhibiting much of the effects of the Poison, having been held in the hand to prevent its escape.

#### EXPERIMENT VII.

A bird of the same genus (as employed in the last experiment) was wounded in the muscles of the inferior part of the wing, with the unprepared milk of the Antshar, collected from a different tree in the province of Blambangan.

In 15 minutes he threw up a yellow matter from his stomach and trembled.

In 20 minutes he died, having previously been convulsed.

#### EXPERIMENT VIII.

A Mouse was punctured in the muscles of the fore-leg, near the articulation, with the prepared poison.

He immediately shewed symptoms of uneasiness, running round rapidly and soon began to breathe hastily.

In 5 minutes his breathing was laborious and difficult, and on the 6th minute not being able to support himself, he lay down on his side. In 8 minutes he was convulsed and his breathing was slow and interrupted; the convulsions continued until the 10th minute, when he died.

#### EXPERIMENT IX.

This experiment was made with the sap of the Antshar which I collected near the village of Porrong in Passooroowang, and prepared according to the process I had seen at Banjoo-wangee, with the spices above mentioned. As its object is to shew the relative action of the poison collected in different parts of the Island, (and as it generally agrees with the 1st and 2d experiments,) I shall only mention its chief stages.

In one minute after the puncture, the animal began to shiver and his skin was contracted.

In 5 minutes he extended his tongue and began to retch.

In 8 minutes he trembled violently.

On the 21st minute he vomited.

In 24 minutes, after repeated vomiting, his extremities were convulsed.

On the 29th minute he died.

The appearances on Dissection were exactly the same as those observed in the 1st and 2d Experiments.

#### EXPERIMENT X.

The simple unprepared juice of the Antshar from the same tree (vide Experiment IX) applied on a small dog, in the usual manner, caused death on the 19 minute, with the Symptoms that occurred in the other Experiments.

#### EXPERIMENT XI.

A small Monkey was wounded in the muscles of the thigh, with a dart covered with the prepared Oopas from Banjoowangee.

He was instantly affected by the poison, and in less than one minute lay prostrate on his side : on attempting to rise he shewed symptoms of drowsiness, which continued 5 minutes, when he began to retch.

On the 6th minute he vomited and discharged the contents of his rectum. He was soon seized with convulsions, and on the 7th minute he died. The same appearances were remarked on Dissection as in the former Experiments.

## EXPERIMENT XII.

A Cat was wounded with the same poison.

In one minute the breathing became quick.

In 7 minutes the saliva flowed in drops from the tongue.

In 9 minutes she vomited a white frothy matter, and appeared in agony.

On the 11th minute she threw up an excremental matter.

In 14 minutes she discharged the contents of the bladder and rectum involuntarily.

In 15 minutes she died convulsed.

## EXPERIMENT XIII.

The following experiment was made on the animal of the Ox tribe in common domestic use on Java, called Korbow by the Javanese, and Buffalo by the Europeans: the subject was full-grown, and in perfect vigour and health. Having been well secured, he was wounded by a dart somewhat larger than those used in the other experiments, covered with the Oopas from Blambangan (applied about 24 hours before) in the internal muscles of the thigh, in an oblique manner, the skin having been previously divided to admit the weapon freely.

The animal being in some degree loosened, about one minute after the puncture, the dart was extricated : I suppose that about 6 grains of the poison adhered to the wound.

On the 10th minute the respiration was somewhat increased and heavy.

In 20 minutes he had a copious discharge from his intestines, a watery fluid flowed from his nostrils, and he showed some symptoms of drowsiness.

In 30 minutes he had an increased flow of saliva which dropped from his mouth, he extended his tongue and licked his jaws; his respiration became more laborious; his pectoral muscles acted with violence, and the abdominal muscles were strongly contracted above the pelvis. His motions were slow and difficult. His muscular exertions were much diminished, and he exhibited great fatigue accompanied by restlessness : all these symptoms gradually increased until

The 60th minute—his hair stood erect : unable to support himself, he lay down : he had contractions of the extremities : the abdominal and pectoral muscles were more violently convulsed and the respiration was more laborious.

The restlessness rapidly increased; having risen with difficulty he quickly lay down again exhausted and panting—the flow of saliva from his mouth continuing.

In 75 minutes he extended his tongue and made an attempt to vomit, his extremities trembled: he rose and threw himself down again suddenly extending his head.

On the 80th minute the saliva flowed in streams from his mouth mixed with froth: he retched violently, with excessive convulsive action of his pectoral muscles, but unable to vomit, he appeared in great agony.

In 90 minutes he extended his head with strong convulsions, and trembled; the hair stood erect, he discharged the contents of his bowels; the breathing became more laborious, and the muscles of the abdomen and breast acted with excessive violence.

The agony increasing, he rose a few seconds, but unable to support himself, fell down again.

The 110th minute having made an attempt to rise, he fell down head foremost, with convulsions of the extremities and head—he groaned violently, the respiration was much impeded and recurred at intervals of 15 seconds.



On the 120th minute, he lay in great agony, groaned, bellowed, and extended his tongue and extremities violently convulsed.

In 125 minutes, he was entirely exhausted ; the breathing returned after long intervals.

On the 130th minute, he died convulsed.

Fifteen minutes after the motions of life had ceased, I opened the cavities of the abdomen and breast. The stomach was immensely distended with air ; the vessels of all the viscera of the abdomen were as injected and distended with blood. In the thorax the lungs were of a vivid, florid, crimson colour, and the great vessels (the aorta, venæ-cavæ, and the arteries and veins of the lungs) were gorged with blood.

A small puncture being made into the aorta, the blood bounded out in a stream of a beautiful crimson colour ; from the venæ cavæ it flowed of a dark livid colour. In the large muscles of the pectus which had been divided in the dissection, a trembling vibratory motion was observed full 20 minutes after the motions of life had ceased.

#### EXPERIMENT XIV.

A Fowl of middling size was punctured in the muscles of the thigh with a poisoned dart from

Banjoowangee. During the first hour it was little affected by the wound. In about two hours it appeared drowsy, and had slight shiverings. It continued drooping and quiet till 24 hours after the puncture, when it died.

#### EXPERIMENT XV.

Having, by the assistance of the Commandant of Banjoowangie, obtained from the island of Bali an arrow, supposed to be armed with the Oopas from Borneo, I wounded a Dog in the muscles of the thigh. On the 10th minute he became restless, attempted to extricate himself and barked.

In 14 minutes, he extended his tongue, had an increased flow of saliva, shewed a disposition to vomit.

In 15 minutes, he was very much agitated, jumping, barking, and making violent efforts to escape,—the attempts to vomit became more repeated.

In 25 minutes he appeared exhausted and extended his limbs.

In 30 minutes the muscles of the abdomen were contracted.

In 32 minutes he vomited.

In 37 minutes he vomited an excremental matter.

In 40 minutes he breathed heavily and laboriously, the muscles acted violently.

In 45 minutes lying exhausted and breathing hastily.

In 50 minutes he started suddenly and barked.

In 55 minutes he cried out violently, and having discharged his excrement—after a few interrupted respirations, he died. On dissection the same appearances were observed as after the above related experiments.

#### EXPERIMENT XVI.

I obtained a small quantity of the Oopas of the Island of Borneo, which having moistened, and rendered somewhat fluid with cold water, I applied to a dart, and wounded a Dog in the usual manner.

The first three minutes, he appeared little affected by the wound.

On the 5th minute he shewed symptoms of drowsiness, which gradually increased.

In 6 minutes he staggered and reeled round.

In 10 minutes the drowsiness returned after which he reeled round again. He now had an increased flow of saliva and his breathing became quicker.

In 12 minutes he reeled round again, with more violence and trembled.

On the 14th minute he fell down with violent tremors and extended his extremities convulsed : after a short calm, the symptoms recurred with greater violence on the 15th minute, when after violent tremors, convulsions and screaming he died.

A creeping undulatory motion was observed in the skin after death over the surface of the whole body in this and several other instances.

#### EXPERIMENT XVII.

The following experiment was made at Soorakarta (in the course of the month of March 1812) with the poison of the Antshar which I collected at Banjoowangee in July 1806.

A dog of middling size was wounded in the usual manner in the muscles of the thigh with a dart that had been dipt into the Poison about 24 hours before, and during the interval had been exposed to the open air of a chamber. During the first twenty minutes after the punc-

ture he remained quiet and shewed few symptoms of uneasiness, except a kind of heaviness and fatigue: on the 20th minute his abdominal muscles were somewhat contracted and he breathed heavier.

In 25 minutes he had an increased flow of saliva and licked his jaws.

In 27 minutes he started, screamed violently, fell down convulsed, and discharged the contents of his rectum.

On the 28th minute the convulsions returned violently and continued without interruption till the 30th minute, when he died.

The dissection agrees with those previously made. The stomach was distended: it contained the food previously taken, the poison having acted with uncommon violence, it was not ejected as usual. In the Thorax the large vessels were very much distended with blood exhibiting the appearances above described.

The vessels of the lungs were distended and the lungs were florid.

On removing the cranium the brain and dura mater were found nearly natural, the former pale and perhaps more watery than usual.

*Experiments with the Tshettik.*

## EXPERIMENT XVIII.

A Dog of middling size was wounded in the muscles of the thigh with a dart covered with the fresh prepared Poison of Tshettik.

In 2 minutes he shewed symptoms of uneasiness ; he appeared faint and lay down.

In  $3\frac{1}{2}$  minutes he was seized with convulsive twitchings of the extremities, was very restless and his breathing became quick : these symptoms gradually increasing to the 6th minute while he continued as exhausted in a lying posture.

He now raised himself, extended his head as if attempting to leap, but fell down, was seized with violent convulsions, attended by quick and interrupted breathing, to the 9th minute, when he died.

## EXPERIMENT XIX.

A small Dog was wounded in the usual manner in the muscles of the thigh with the poison of *Tshettik*.

He immediately placed himself in a drooping posture, his fore-legs bent as in kneeling, and thus he continued to the 5th minute ; he was now seized with trembling which continued

about half a minute, when he suddenly started, extended his head and neck, stretched out his extremities, and falling on his side, was violently convulsed.

His legs continued stiff, extended and trembling. These symptoms continued with great force,

Until the 8th minute, when they gradually diminished; his respiration became interrupted; he had occasional twitchings to the 11th minute, when he died quietly.

On dissection the contents of the abdomen were found perfectly natural—the stomach was distended with food newly taken in. In the Thorax the heart and lungs appeared natural—the aorta was almost empty, and on being punctured a small quantity of blood ran out of a dark colour: the ascending and descending venæ cavæ were distended with dark blood, which being let out soon coagulated in the cavity of the Thorax. The brain was most affected; the vessels were distended and inflamed, the sinuses were filled with dark coloured blood.

#### EXPERIMENT XX.

A fowl nearly full grown was pierced through the muscles of the thigh with an arrow armed with *Tshettik*.

After the first impression was over, it seemed insensible to the wound about one minute, walking round and picking up grains as usual; near the second minute it became giddy, and unable to stand, placed itself into a half sitting posture.

On the 3d minute it began to breathe hastily.

In 5 minutes it trembled and discharged the contents of its bowels. It now made an attempt to rise, and extended its head and neck, but being unable to support itself, reeled round, fell down, had violent convulsions with quick interrupted breathing, which continued to the 9th minute when it died.

#### EXPERIMENT XXI.

A Fowl was wounded with a poisoned dart in the back near the left wing, the puncture extending towards the cavity of the Thorax.

In less than one minute it shewed some uneasiness and could with difficulty support itself.

In one minute and a half it had a fluid discharge from the bowels, after which it suddenly started, extended its head and legs, and trembled violently, fluttering with the wings.

On the third minute it made a sudden effort to run, and extended its neck, but fell down



head foremost, and was violently convulsed, fluttering with the wings; the respiration was extremely laborious and soon became interrupted, the convulsions continued to the fourth minute, when it died.

#### EXPERIMENT XXII.

A Fowl was wounded in the usual manner with an arrow covered with the Oopas of Tshettik, which had not been mixed with the spices employed in the preparation.

On the 40th second it felt the operation picking its breast violently, as if it perceived an itching.

In one minute it reeled round.

In one minute and a half it extended its neck, fell down forwards, fluttered and was seized with convulsions which continued to the 3d minute, when it died.

#### EXPERIMENT XXIII.

The following experiment was made in August 1808, two years after the preparation of the poison.

A Fowl was wounded in the usual manner with a poisoned dart. It died with the above related symptoms two minutes after the puncture.

## EXPERIMENT XXIV.

I infused a small portion of the bark of the Tshettik in Alcohol: having macerated it a few days I exposed it to the open air for co-operation, and obtained a small quantity of an elegant brown shining resin.

A dart was covered with a few grains of this and a fowl wounded in the usual manner.

The first three minutes after the puncture it remained quiet and appeared drooping.

On the 4th minute it reeled backward, tottered, and its limbs were relaxed.

On the 6th minute it appeared to be sleepy, but its drowsiness was frequently interrupted by twitchings and startings.

In 8 minutes it tottered, but soon became drowsy again.

In 12 minutes it fell down convulsed and trembling, but soon became quiet, and its breathing was quick.

On the 17th minute it had occasional twitchings in the extremities and was unable to stand erect.

On the 20th minute the drowsiness had considerably diminished; it rose, and supported itself, but tottered in attempting to walk.

From the 30th minute it began to revive, all the effects gradually went off, and

On the 60th minute it was apparently well.

### EXPERIMENT XXV.

The following experiment was made at Soorakarta in the month of March of the present year 1812, nearly six years after the collection of the Oopas in Blambangan.

A dog of middling size was wounded in the muscles of the thigh, with a dart which having been dipt into the Oopas was exposed half an hour to the open air, to give the poison time to become dry.

During the first two minutes he stood quiet, and his appearance only exhibited the pain produced by the wound.

On the 3d minute he was drowsy.

In 5 minutes he began to tremble violently and to reel.

On the 7th minute he fell down head foremost and was convulsed, his extremities being stiffly extended; unable to raise himself again, the convulsions continued with excessive violence till the 9th minute, when he died.

On *dissection* his stomach was found natural and contained the food lately taken in: all the viscera of the abdomen were also natural. In the Thorax the venæ cavæ were found completely filled and the aërta partially filled with blood, the lungs still retained a florid colour. On removing the cranium and exposing the brain the whole surface of the dura mater was found inflamed, and the vessels were injected with blood; that part covering the right lobe in particular was in a state of the highest inflammation; it exhibited externally a livid bluish colour: on the internal surface (of the dura mater) the fluid had been forced out of the vessels by the violence of the action, and it was covered by a bloody lymph. The integuments of the cerebellum were also strongly affected. In the vessels of the surface of the brain itself some marks of inflammation were also perceived. On tracing the wound no evident marks of inflammation appeared, and the remains of the adhering Poison were evident along its course.

#### EXPERIMENT XXVI

(To shew the effects of the Poison taken *internally*.)

To a nearly full grown dog, about half the

quantity of Poison generally adhering to a dart was given in a little boiled rice.

During the first ten minutes he remained quiet and appeared a little drowsy : on the 14th minute he could with difficulty support himself erect, and indicated symptoms of pain : he shewed some disposition to vomit, and extended his jaws.

In 28 minutes he extended his hind legs spasmodic.

In 31 minutes he had violent spasms over his whole frame.

In 37 minutes he stood breathing hastily, his abdomen appeared uneasy.

In 39 minutes he had spasmodic extensions of his extremities; which lasted half a minute, when he became quiet; but being faint, supported himself against a wall.

In 46 minutes he started up convulsed.

In 48 minutes he appeared oppressed in the head and drowsy.

In 54 minutes he started up suddenly.

In 60 minutes he appeared oppressed and drowsy.

In 61 minutes he fell backwards in violent convulsions, his extremities strongly contracted by spasms, after which he became calm.

On the 63d minute being roused and attempting to walk, he fell backwards with violent spasms and convulsions.

In 65 minutes, having raised himself with difficulty, he stood with his extremities far extended, and his muscles in a state of spasmodic contraction.

In 67 minutes he fell down head foremost, violently convulsed, his breathing became interrupted, and

On the 69th minute he died.

*Dissection.*—On opening the abdomen several ounces of a clear serous fluid, mixed with streaks of newly coagulated blood, were found effused in the cavity: the vessels of the external coats of the stomach of the intestines and mesentery were in the highest possible degree inflamed, and distended beyond their natural size, having evidently been acted on by the most violent force; the stomach being opened was found empty, its internal coat was corrugated and covered with frothy mucus in which were found the remains of the poison, a dark yellow fluid

with some grains of the rice with which it was conveyed. In the Thorax the lungs were still florid, the venæ cavæ much distended, the aërta nearly empty; being punctured the blood flowed out of a dark hue.

On exposing to view the brain, the dura mater was nearly natural, only the larger vessels somewhat more distended than usual: the vessels of the brain itself indicated a slight degree of inflammation.

#### REMARKS ON THE EXPERIMENTS.

I have selected from a large number of experiments, those only which are particularly demonstrative of the effects of the Antshar and of the Tshettik when introduced into the circulation. The poison was always applied by a pointed dart or arrow made of bamboo. The extremity to which the poison adhered was completely spear-shaped, about an inch long, and a line and an half broad near the middle of its length.

When I contemplated an experiment, the dart was dipt into the fluid poison which I preserve in closed vessels. It is necessary to give it some time to become dry and fixed upon the dart. I found by repeated trials the poison

most active, after having adhered twenty-four hours to the weapon; if applied in a fluid state, it does not enter the wound in sufficient quantity to produce its effects, but in the attempt to thrust it through the muscles, it separates itself from the dart, and adheres externally to the integuments.

The operation of the two different poisons on the animal system is essentially different.

The first 17 experiments were made with the Antshar; the rapidity of its effect depends in a great degree on the size of the vessels wounded, and on the quantity of poison carried into the circulation.

In the first experiment it induced death in 26 minutes,—in the second, which was made with the sap collected in Poogar, in 13 minutes. The poison from different parts of the Island has been found nearly equal in activity.

In the 9th experiment, (with the poison from Passooroowang,) death followed in 29 minutes.

The common train of symptoms is, a trembling and shivering of the extremities, restlessness, erection of the hair, discharges from the bowels, drooping and faintness, slight spasms and convulsions, hasty breathing, an increased



flow of saliva, spasmodic contractions of the pectoral and abdominal muscles, retching, vomiting, excremental vomiting, frothy-vomiting, great agony, laborious breathing, violent and repeated convulsions, death.

The effects are nearly the same on quadrupeds, in whatever part of the body the wound is made. It sometimes acts with so much force, that not all the symptoms enumerated are observed; in these cases, after the premonitory symptoms (tremors, twitchings, faintness, and an increased flow of saliva,) the convulsions come on suddenly, and are quickly followed by death,—see the 17th Experiment.

The Oopas appears to affect different quadrupeds with nearly equal force, proportionate in some degree to their size and disposition. To Dogs it proved mortal in most experiments within an hour,—a Mouse died in 10 minutes, see Exper. 8th,—a Monkey in 7 minutes, see Exper. 11th,—A Cat in 15 minutes, see Exper. 12th.

A Buffalo, one of the largest quadrupeds of the Island, died in 2 hours and ten minutes, see Exper. 13th. I do not think the quantity of poison introduced in this experiment was pro-

portioned to that which was thrown into the system in the experiments on smaller animals ; the dart fell from the wound before a sufficient quantity had been taken into the circulation to produce a rapid effect. If an animal is pierced by an iron spear to which the poison has been applied, it feels comparatively but little of the effects, because the weapon is again retracted, and the poison does not remain in contact with the wound long enough to be taken into the circulation. Mr. Leschenaut de la Tour stabbed a Buffalo a number of times successively with a common spear or pike of the Javanese, largely covered with the poison of the Tshettik, without very sensibly affecting the animal. A dart or arrow prepared of bamboo is a more fit instrument to introduce the Oopas ; having once pierced the skin, it easily adheres to the parts it comes in contact with, on account of its inconsiderable weight.

The Natives of Macasser, Borneo, and the Eastern Islands, when they employ this poison, make use of an arrow of bamboo, (to the end of which they attach a shark's tooth,) which they throw from a blow-pipe or *sompit*.

The 15th and 16th Experiments are *comparative*, they were made with the Oopas from

Bali and Borneo; by contrasting them with the 1st, 2d, 9th, and 17th Experiments, it sufficiently appears how far the Oopas of the different Islands agrees in activity. It is probable, that the Oopas from Borneo, when fresh, may act more forcibly than that of Java.

If the simple or unprepared sap is mixed with the extract of tobacco or stramonium, (instead of the spices mentioned in the account of the preparation) it is rendered equally, perhaps more active,—see the 3d and 4th Exper.

Even the pure juice unmixed and unprepared, appears to act with a force equal to that which has undergone the preparative process, according to the manner of the Javanese at Blambagan. See the 5th Exper. made with the fresh juice of Banjoowangee, and the 10th Exper. with the fresh juice collected at Goorong, near Passooroowang.

Birds are very differently affected by this poison;—Fowls have a peculiar capacity to resist its effects. In the 44th Exper. a Fowl died 24 hours after the wound, others have recovered after being partially affected.

The 6th and 7th Exper. shew the effects of

the unprepared juice on two birds of the genus *Ardeo*.

The 18th and the succeeding Exper. were made with the poison prepared from the Tshettik. Its operation is far more violent and rapid than that of the Antshar, and it affects the animal system in a different manner; while the Antshar operates chiefly on the stomach, and alimentary canal, the respiration and circulation, the Tshettik is determined to the brain and nervous system.

A relative comparison of the appearances on dissection, demonstrates in a striking manner the peculiar operation of each.

The 18th, 19th, and 25th Experiments, give a general view of the effects of the Tshettik on quadrupeds.

After the previous symptoms of faintness, drowsiness, and slight convulsions, it acts by a sudden impulse, which like a violent apoplexy prostrates at once the whole nervous system.

In the 18th and 19th Exper. this sudden effect took place on the 6th minute after the wound, and in the 25th Experiment on the 7th minute, the animals suddenly started, fell down

head-foremost and continued in convulsions till death ensued.

This poison affects Fowls in a much more violent manner than that of the Antshar, as appears from the 20th and 21st Experiment; they are first affected by a heat and itching of the breast and wings, which they shew by violently picking these parts; this is followed by a loose discharge from the bowels, when they are seized with tremors and fluttering of the wings, which having continued a short time, they fall down head-foremost, and continue convulsed till death. I have related such experiments as shew the gradual operation of the poison; in some instances (especially in young Fowls) it acts with far greater rapidity; death has frequently occurred within the space of a minute after the puncture with a poisoned dart.

It appears from the 22d Experiment, that the simple unmixed decoction of the bark of the root of the Tshettik is nearly as active as the poison prepared according to the process above related.

The 24th Experiment shews plainly, that the resinous portion of the bark is by no means so active as the particles soluble in water; a Fowl

wounded by a dart covered with the pure resin, recovered after being very partially affected ; it has also been remarked above, that in the preparation of the dried juice of the Antshar, the resinous parts are thrown away. The strength of the poison remains unimpaired, if carefully preserved a number of years, as is evident from the experiments made at different periods of its age.

Taken into the stomach of quadrupeds, the Tshettik likewise acts as a most violent poison, but it requires about twice the period to produce the same effect which a wound produces.

In the 26th Exper. its operation internally is detailed, and the appearances after death are described in the account of the dissection.

But the stomachs of Fowls can resist its operation ; having mixed about double the quantity generally adhering to a dart, with the food of a fowl, it consumed it without shewing any marks of indisposition.

The poison of the Antshar does by no means act so violently on quadrupeds as that of the Tshettik. I have given it to a dog ; it produced at first nearly the same symptoms as a puncture ; oppression of the head, twitchings, faint-

ness, laborious respiration, violent contraction of the pectoral and abdominal muscles, an increased flow of saliva, vomiting, great restlessness and agony, &c. which continued nearly two hours; but after the complete evacuation of the stomach by vomiting, the animal gradually recovered.

Rumphius goes so far as to assert that a small quantity may be taken internally as a medicine. In speaking of qualities of the *Arbor Toxicaria*, he says the crude and unmixed Ipo is an antidote to the bite or sting of venomous fishes and insects; also, that a person affected by an eruption of the skin or vecuations, may take a small pill of the Oopas, which will attract all impurities from the intestines and carry them off.

The appearances observed on dissection explain in a great degree the relative operation of the poisons. In animals killed by the *Antshar*, the large vessels in the Thorax, the aërta and venæ cavæ, were in every instance found in an excessive degree of distention: the viscera in the vicinity of the source of circulation, especially the lungs, were uniformly filled in a preternatural degree with blood, which in this viscus and in the aërta still retained a florid colour and was completely oxygenated: On

puncturing these vessels it bounded out with the elasticity and spring of life. The vessels of the liver, of the stomach and intestines, and of the viscera of the abdomen in general, were also more than naturally distended, but not in the same degree as those of the breast. In the cavity of the abdomen a small quantity of serum was sometimes effused.

The stomach was always distended with air and in those instances in which the action of the poison was gradual, and in which vomiting supervened in the course of the symptoms, its internal coat was covered with froth.

The brain indicated less of the action of the poison than the viscera of the thorax and abdomen. In some instances it was perfectly natural, in others marks of a small degree of inflammation were discovered.

An undulatory motion of the skin and of the divided muscles, was very evident in some of the dissected animals.

The appearances observed in the animals destroyed by the Tshettik were very different. In a number of dissections the viscera of the Thorax and abdomen were found nearly in a natural state, and the large vessels of the



Thorax exhibited that condition in which they are usually found after death from other poisons.

But the brain and the dura mater shewed marks of a most violent and excessive affection. In some instances the inflammation and redness of the dura matura was so strong, that on first inspection, I supposed it to be the consequence of a blow previously received, until I was taught by repeated examinations that this is a universal appearance after death from Tshettik.

I am not at present at leisure, nor am I properly prepared, to investigate fully the operation of the two poisons described on the animal system, or to elucidate their effects by a comparison with other poisons. The series of experiments I have proposed to myself, and which are necessary for the purpose, is by no means finished, nor does my situation at present afford me those opportunities of scientific consultation, which such an investigation requires; it remains for a future period also, to determine, relatively, the force of these poisons with that of the most venomous Serpents; the Tshettik exceeds, perhaps, in violence, any poison hitherto known. It shews its effects peculiarly and almost exclusively on the brain and nervous system.

The action of the Antshar is directed chiefly to the vascular system. The volume of the blood is accumulated in a preternatural degree in the large vessels of the Thorax.

The circulation appears to be abstracted from the extremities and thrown upon the viscera near its source. The lungs in particular are stimulated to excessive exertions. The balance of circulation is destroyed. The vital viscera are oppressed by an intolerable load, which produces the symptoms above described, while in the extremities a proportionate degree of torpor takes place, accompanied by tremors, shivering, and convulsions.

I have but little to add concerning the operation of the Antshar on the *human* system, the only credible information on this subject is contained in the work of Rumphius, who had an opportunity of personally observing the effect of the poisoned darts or arrows, as they were used by the natives of Macassar in their attack on Amboina about the year 1650.

They were also employed by the inhabitants of Celebes in their former wars with the Dutch. Speaking of their operation, he says the poison touching the warm blood, is instantly carried through the whole body, so that it may be felt

in all the veins, and causes an excessive burning, and violent turning in the head, which is followed by fainting and death.

The poison (according to the same author) possesses different degrees of violence according to its age and state of preservation.

The most powerful is called Oopas Radja and its effects are considered as incurable; the other kinds are distributed among the soldiers on going to war. After having proved mortal to many of the Dutch soldiers in Amboina and Macassar, they finally discovered an almost infallible remedy in the root of the *Crinum Asiaticum* (called by Rumphius *Radix Toxicaria*) which if timely applied, counteracted by its violent emetic effect, the force of the Oopas.

An intelligent Javanese at Banjoowangie informed me, that a number of years ago, an inhabitant of that district was wounded in a clandestine manner by an arrow thrown from a blow pipe, in the fore arm near the articulation of the elbow. In about 15 minutes he became drowsy, after which he was seized with vomiting, became delirious, and in less than half an hour he died.

From the experiments above related on different quadrupeds, we may form an analogous estimate of its probable effects on man.



## XI.

---

### SKETCH OF BORNEO,

BY THE LATE

*Dr. LEYDEN.*

---

**T**HE great Island of Borneo stretches from the fourth degree of South latitude to the 8th of N. lat. and from the 150th to the 158th degree of long. being about 700 miles in length, and 500 in breadth; it lies almost in sight of Java. The shores of the Island are generally covered with mud banks; the Coasts are low and marshy, with small hills generally covered with wood. The center swells with ranges of huge mountains, which are commonly denominated the Chrystal Mountains, from the quantity of chrystalline stones found there, and these are said to run in a North and South direction. At the foot of these mountains lies a large inland lake, which is termed a sea by the Dutch, and which is reported to be larger than the lake of Manilla. From this lake spring all the con-

siderable rivers in Borneo, which are said to be more than a hundred in number. The Island of Borneo, though uncommonly rich in gold, diamonds, camphor, and other valuable productions, and very fertile in the interior, yet from the indolence of the inhabitants, and the want of polity in the small states of the Coast, is believed not to produce rice sufficient for its own consumption, and has been compelled to depend on Java. This however may, in a great measure have proceeded from the general policy adopted by the Dutch.

The Coasts of Borneo are occupied by a number of petty Mahometan states, none of which are of great antiquity. The original population of these is a mixture of Malays, Javanese, Bugis and Macasars, but a small number of Arabs, and a very considerable number of Chinese are always to be found in them. The interior of Borneo is chiefly occupied by the numerous rude agricultural tribes of a people termed *Dayak*, very few of whom have embraced the Moslem religion. The religion of the *Dayak* is little understood, though some of their usages have attracted notice from their singularity. In many places of the Island, the possessions of the *Dayak* extend quite to the shore, as on a

considerable part of the Eastern Coast, within the straits of Macasar. There are considerable settlements of the Chinese along almost all the principal rivers of Borneo in the interior, and it is said, that in some places they have attempted to acquire a species of independence.

The lofty mountains, ranged on the center of Borneo, are represented as occupied by a people named Punams, in the very rudest state of savage life.

### *Of the Maritime Districts of BORNEO.*

The Maritime States of Borneo are chiefly the following :—1st, Borneo proper—2d, Coti—3d, Passir—4th, Banjermassin—5th, Matten—6th, Pontiana—7th, Sambas.

1st. *Borneo* properly pronounced *Bornch* or *Bronch*, is generally reckoned a state of some antiquity, and is alluded to in the annals or legends of Malacca, as a proud independent state, by no means disposed to admit the Sovereignty of any other kingdom. The inhabitants refer their origin to a traditionary emigration from Johone, but are ignorant of their own history, according to every account. Dalrymple, in his "*Essays on the Sooloos*," published in the

first volume of the *Oriental Repertory*, alledges, that the Borneyen Empire not only extended over that Island, but also over the Sūki and Philippines in ancient times. I have been able to discover no traces of such dominion, and Dalrymple himself gives a list of the Sovereigns of Borneo, which he perused at Sūlū, and which only recites six names before that of the reigning Sovereign. Thus :—

1—Meraham Tumbang Derumput.

2—De Pulow.

3—Bongso.

4—Abdul.

5—Hussein or De-luba.

6—Di Bornei or Appang.

7—Depertuan Seef-ed-din,—the reigning Prince.

Borneo, however, has some features of an ancient State, one of which, is the high veneration for the authority of the Prince, which is found in all the ancient Malay States, but among very few of those of late origin. The Sultan accordingly maintains a higher degree of state and dignity than the greater part of Malay Princes.

The dominions of Borneo proper, are bounded on the West by the territories of Sambas,



and on the East by the Malluder and other districts nominally subject to the Sulus. The state of Borneo consequently occupies the most Northerly districts of the Island of Borneo: Between Sambas and Borneo are situated a variety of small Towns, such as *Serawa*, the piratical chief of which, lately cut off the ship Commerce, *Klakka* and *Mokka*, the chiefs of which are denominated Pangerans, *Scribas* and *Palo*.

The Government of Borneo is conducted, according to Mr. J. Jesse, by the Sultan and a Council of his principal Officers, consisting of the Bendhahana, the *De-gadong* or chief of the household, the *Temangūng*, the *Pa-mūncha*, or administrator and the Shabender. The law of the land is the *undang undang Bornch*, which is said to be of some antiquity.

The river of Borneo is represented as navigable for a considerable way above the town for ships of great burthen, but it is very narrow, and land locked at the mouth, where it is about a quarter of a mile broad. The town of Borneo is built on posts on a marsh, and in the times of Valentine, consisted of nearly 4000 houses; it occupied both sides of the river, and is situated about ten miles from the mouth

of it. The productions of Borneo capable of export, are gold-dust, pearls, wax, bird's-nests, camphor and rice, and the general imports are tin, piece goods, and most of the products of Java. Borneo proper is one of the states on the Island which grows rice sufficient for its own consumption. The camphor of Borneo is the best in the world, and the next to it in point of quality, is that of Baros, in Sumatra. The Borneo camphor does not exceed the annual quantity of 35 peculs of 125 lbs. which costs about 3,200 Rix Dollars. The camphor of Sumatra, amounts to about 20 peculs, costing 2,200 Rix Dollars. A species of camphor is produced in Japan, from the leaves of a kind of laurel, which costs about 50 Rix Dollars per pecul.

The cultivation of pepper was introduced into Borneo by the Chinese, between 40 and 50 years ago; when Mr. Jesse, in 1774, the period of the original settlement of Balambangan, stipulated by treaty for the exclusive trade of pepper at Borneo, he found, that not more than 4000 peculs were produced, and this cost about 17 Spanish Dollars per pecul. I understand that the country still produces pepper equal at least to this specified quantity.

The trade between Borneo and the Chinese port Amoy, is very considerable. According to Forster, there were seven junks at Borneo, in 1775. The return cargoes procured by the Chinese are chiefly camphor, sea-slug, tortoise-shell, bird's-nests, clove, bark, dammar-resin, a species of black-wood, which the Chinese work up into furniture, wax, agal-agal, a species of sea-weed, which yields a gum or glue, sandal-wood, rattans, and various barks used in dyeing.

The English were long in the habit of dealing at Borneo in piece goods to a small extent, taking their returns in pepper and gold-dust; lately however, the inhabitants have had a bad name, and are probably at present little acquainted with Europeans. Little intercourse and much jealousy subsisted between Borneo proper and our last settlement of Balanbangan, and since that settlement was abandoned, they have certainly been occasionally guilty of Piratical practices.

The Malay population of Borneo proper is distinguished for haughtiness and indolence. They are not however devoid of some arts, particularly that of casting brass cannon, in which they are skilfull; this is also practised at Palembang.

The period of the introduction of Islam into Borneo is not known, but it appears from the accounts of the Portuguese, that it was previous to 1530.

*Of the districts in BORNEO between BORNEO  
PROPER and COTI.*

The districts on the N. E. of Borneo are Pappal, Malluda, Mangedara and Tirur, the greatest part of which, on the sea coast, especially some time ago, were under the influence of Sūlū. When we received the cession of Balamanggan from the Sūlūs, they were supposed to have ceded to the English the whole of their influence in these districts.

*Pappal.*—The district of Pappal lies adjacent to the dominions of Borneo proper, from which it is divided by the river of Ki-manis. The soil of the country is reckoned fertile, but lies generally uncultivated along the shore ; it is full of stately trees, and the savanahs abound in the species of black cattle, termed lissang and deer.

The productions of the Coast are sago, rice, beetle-nut, cocoanut-oil, camphor, wax, with a small quantity of pepper and cinnamon. On the river Ki-manis, the inhabitants are termed

Ida-an by Dalrymple, which I consider as only another name for Dyak, and these were formerly accustomed to trade to Java in their own *pro-as*. The rivers of Pangalet and Pappal are inhabited by Malays, as are likewise the districts of La-battuan, I-namnam, Manyatal, Patatan and Kinarut. The river Mangeabung is inhabited by Malays, but the river is not fit for navigation. The river Tavarán is reckoned navigable for boats as far as the central lake of Kiniballu; it is inhabited by Ida-ans with a small colony of Chinese. *Abai* has a harbour sheltered from the Westerly winds; its river with those of Tampasak, Lubak and Ambung, together with Salaman and Pandasang, are inhabited by Malays. The river of Tampasak is also represented to come from the central lake of Kinibalu; after these come the rivers of Lu and Tabalulan, inhabited by the Ida-ans; Tampasak consists of about 200 houses. Tampasak and Tawarran rivers may be regarded as the Northern entrances into the great lake of Kinibalu, which, according to every account must be above 100 miles in circumference, and certainly communicates by means of one of its rivers with Benyar-massing; its waters are re-

presented as whitish, and in some places it is said to be only from 5 to 6 fathoms in depth.

Malludu comprehends the Northern end of Borneo. It abounds in grain and provisions, and is reckoned well peopled in the interior by the Idaans. It has a deep bay, on the West side of which is situated the town and harbour of Barkoku. On the East side of the bay there are pearl banks. This deep bay is said to approach to within 40 or 50 miles of the lake Kini Balu, and the mountain Kini Balu appears rising abruptly to a stupendous height on the West side, while on the East, it slopes gradually down to the low lands of Sandakan. The commodities which Malludu produces are nearly the same as Borneo proper. The powerful tribes of the Idaan or Dayak, who occupy the Country around the great lake, and have a sovereign of their own, who is not dependent on the Malays, are represented as averse to commerce. This, however, is probably a misrepresentation, as they certainly have a communication with Banyer Massing. Malludu abounds particularly in rattans and clove bark, but its pearls are not of so fine a water as the Sulu pearl.

Manggi-dara is the most Easterly district of Borneo, and extends itself towards the Sulu

Islands in a long narrow point, named **Unsang**. Here the Spaniards formerly had a settlement which they relinquished to the **Sulus**, but the woods still abound in cattle, the breed of which was left by them. The Eastern part of **Unsang** likewise abounds in wild elephants which are said to be found on no other part of **Borneo**.

**Manggi-dara** produces gold, bird's-nests, wax, dammer, and the species of red-wood named **Lacka**, with some camphor. Considerable quantities of sea slug and tortoise-shell may likewise be procured from the numerous shoals and rocks and inlets along the coast.

**Paitan**, the name of a river and bay, produces a considerable quantity of camphor and clove bark, but the Coast is very shoaly and foul, as are the bays of **Lubuk** and **Sugut**. The river of **Sugut** descends from the lake of **Kini Balu**. East of **Labuk** lies the Island of **Bahela-tulis**, which forms the entrance of the bay of **Sandakar**, which is about five leagues deep, and has three harbours, that of **Buli-luko** in the West, **Segalihut** on the South-west, and **Damendung** on the South. The bay of **Sandakar** abounds in large and small timber, stones, lime, for building, and has plenty of water. The **Sulus** have a

settlement on the small Island of Lubak-can, whence they carry on a trade with the interior of Borneo. Great abundance of sea slug and agar or eagle wood is procured in this vicinity. The promontory of Unsang which is by no means well exhibited, terminates in a bluff point at the North East part of which is a small Island named Tambisan; between Sandakan and Tambisan are at least 30 large rivers, all of which except Mariack, are branches of the great river Kinabatangan, which descends from the Lake of Kini Balu. The most considerable of all these are the most Westerly, especially Towsan-abai or the meeting of waters, so called from being the conflux of several large streams. The bar of this river is shallow but the coast is clear of banks. The North coast of Unsang has many bays, but none sheltered against Westerly winds. The harbors of Towsan Duyor and Mamuyong however deserve to be mentioned. On the South coast of Unsang are the rivers and Bays of Sibait Tunku, Malaburg, Babatu and Saturung, which are all small. Much sea slug however is procured on this coast. The bay of Jiong is very large and contains several Islands and shoals, and on the hills around it are several caves which produce bird's-nests. From



Jiong to the river Tawaw the country is broken by creeks and rivers into numerous inlets.

Tirun or Tedong is the common name of a large district on the East of Borneo, which has never been much frequented by European shipping. The coast of Tirun is in general a low swamp overgrown with Mangroves, inhabited by a savage people addicted to piracy, and named Orang Tedong or Tirun who have never embraced the religion of Islam. They are probably like the Idaan, a tribe of Dayak. Dalrymple observes in his *Orient. Repert.* vol. I, page 552, that the Tirun and Idaan languages are equally foreign to the Sulu, and each other. The matter, however, has never been properly investigated. The mountains of the Idaan are at a great distance towards the interior. The Tirun country produces a much greater quantity of bird's-nests than all other regions of the East. The whole country is covered with sago trees, which afford the chief subsistence of the inhabitants. The rivers are numerous, large and navigable. Besides sago and bird's-nests, the chief products of the country are gold, wax, honey, canes, rattans, matts, sea slug and a species of gulega and bezoar. Some say it

also produces salt petre. The river Sibocu, its Northern boundary, is said to have thirty campongs on its banks, and about 1000 people, and to produce about 40 peculs of bird's-nests and 100 of wax, besides sago, honey, canes, rattans and matts. This river is large but there are shoals at the entrance. Sambagung is a smaller river which produces in its environs about 20 peculs of bird's-nests. The river Lidong or Lili-dong is large, and its district populous, being estimated by the Sulus to contain 10,000 inhabitants. It produces about 25 peculs of bird's-nests. The Bay of Salawang or Sicatae produces about 100 peculs of black bird's-nests.

Balangan or Barunyan is a campong of some consequence, situated on a large river of that name. It was formerly subject to Passir, but at present it is said to have a chief of its own, it produces a great quantity of gold and also earth oil.

Barow or Barong is an independent state governed by its own Sultan, and produces a great number of bird's-nests and other Tirun products, such as wax and sea slugs. This country has a considerable trade in cocoa-nuts with Tuali in Celebes. The river is situated in the bottom of

a deep bay. The small state of Kuran is said to lie on the same river as Barow. It is likewise governed by a chief who assumes the title of Sultan and who is frequently at enmity with the Sultan of Barow, though the subjects of both are chiefly Orang Tedong. About the year 1770, according to Forster, while these two princes were at war, one of them called the Sulus to his assistance. The Sulus seized the opportunity, making both princes prisoners, and after ravaging the country carried them both to Sulu, where they were released on condition of becoming tributary to Sulu and confining their trade to that nation. Dalrymple asserts Barow to be in alliance with Sulu, and Kuran as tributary to it.

South of Barow lies Talisyar, an inconsiderable campong, beyond that a considerable place named Dumaring by Dalrymple, but by Radermacher Danmiar, the Datoos of which has the title of Baginua. To the South of this lies Samuanti, which is under a Datoos Tumangung, and beyond that the river of Tapeandurian or Tupedarian, the inhabitants of which have a bad reputation among Eastern traders.

Coti, or as it is commonly denominated Coti Lama, lies considerably to the South of Samu-

anti, and between them are a number of towns and villages, the names of which are not generally known even to Eastern traders. The town of Coti is situated about 50 miles up the river of that name. The trades and products of the country are nearly the same as at Borneo proper. This town which rose upon the decline of Passir, is chiefly inhabited by Bugis traders. The Sultan resides considerably further up the river with a few Malays and a great number of Dayaks subject to him. According to Radermacher the Sultan of Coti, in 1780, was named Hageahmed.

Aparkarang lies to the South of Coti, and is likewise under the authority of a Sultan, who, in 1780, was named Sultan Thora. This place is at present so insignificant, that I have never been able to meet any Trader, whether Native or European, that had ever heard of it. I believe, however, that it lies between the river Montu and the dangerous bay of Balik-papan, so named, because almost every boat that enters it is overset by the strength of the current. Between Balik-papan and Passir, formerly, in the time of Valentyn, lay a town inhabited by a very brave and ferocious race of Dayak, who made use of the most dangerous poisoned bow-arrows, and

*sumpits* or blow-pipes, with which they on some occasions made such havock, that their campong was termed "the grave of Slave Catchers."

Passir may be considered as a Bugis colony founded by the state of Wajjo; it is situated about 45 miles up the river of that name, which has two fathoms water on the bar. The town consisted of about 300 houses on the North side, chiefly occupied by the Bugis, and the Sultan's Fort was on the South side. About 30 years ago, it carried on a very considerable traffick, but has since that time been greatly on the decline from intestine dissensions. The native products of the country are gold, bird's-nests, wax and rattans, and almost all the staples of Java find a ready sale at Passir; the Bugis withdrew to Pulu Laut, termed by the natives Lautpulu where they have established a considerable town on the island inside of the straits Pulu Laut. The English sent the *Brilliance* to form a factory here in 1772, but some evil commotions caused the design to be abandoned, both Passir and Coti were in ancient times conquered by the Macassers. They entered into alliance with the Dutch in 1686.

Simpanahan, under a small chief who has the title of Pangeran, lies to the South West of Passir. It is an inconsiderable town with few inhabitants with little trade, and producing only a few mats and bird's nests. Valentyn in his time states the campongs between Passir and Pulu Laut as follows, Passir Brava 15 miles from Passir, then comes Pamatan, Apper Pamukan, Capus, Catappa and Camla.

Pulu Laut is about 40 miles in its greatest length and 20 in breadth and its principal inhabitants at present are of Bugis extraction.

### *Of BANJAR MASSING.*

Banjar Massing is the chief state on the South side of the Island of Borneo, and was till very lately reckoned the most powerful on the Island. It lies on the river of that name which is of considerable size and rises at a great distance in the interior of the country. According to popular report it descends from the great central lake of Kini-balu. The mouth of the river is very shallow, not exceeding 12 or 13 feet in depth which compells trading vessels of any magnitude to remain in the offing. After passing the bar, the water deepens to six or seven fathoms. The Moslem popu-

lation about the year 1720, amounted, according to Valentyn, to about 7,200 persons and in 1780, according to Radermacher, they amounted to 8,500. They are a mingled mass of Javanese, Macasers, Bugis and Malays of Johore, Menangkabaw and Palembang, of whom the Javanese may be regarded as the most numerous. The state was founded by a fugitive prince of Madura nearly related to the Susuhonang, and hence the adoption of the Javanese titles and names of places, which has always prevailed at Banjar Massing.

Tabanyan on the East side of the bay, situated on a small river, is the place where the Dutch vessels were wont to lie. It is a small campong, containing only about 250 souls. In the vicinity of Tabanyan and on the S. E. of the river Banjar are situated the following campongs, Moluk containing about 200 inhabitants, Blanang containing about 100, Tambangan containing 80, and Takisong containing about 50 inhabitants, all of whom are Moslems. The Dutch fort is situated on the outside of the town of Banjar Massing or Tatas, at a place named Clayang on the West of the river. It was of pentagonal form and fortified with palisadoes, with three bulwarks towards the river

and two towards the land. Banjar is under the immediate authority of the Sultan's eldest son, who has the title of Pangerang Dupa. The residence of the Sultan was at Cayu Tangi previous to the year 1771, when it was removed by Sultan Soliman Shahid Alla to Martapura, about three days journey up the river. This is a fine hunting station, as the name seems to indicate, and the Sultan and his Court are said to be greatly devoted to this amusement, which they pursue on horseback and catch deer with nooses. Large horses are accordingly in high request at Banjar. According to Radermacher, the population of the Moslem campongs on the river Banjar in the year 1780 was as follows; Cayu-tangi with 200 inhabitants, Banjar Massing or Tatas 2000 inhabitants, Martapura or Bumi Kinchara 1800 inhabitants, Cohan or old Banjar 100 inhabitants, Bekrompi and Lusong 500 inhabitants, Pamanki 100 inhabitants, Brambang 80 inhabitants, Moera-bahan 50 inhabitants, Sungey-benar 40 inhabitants, Labuang-mas 60 inhabitants, Taping 100 inhabitants, Nagara 550 inhabitants, Benois Ampat 90 inhabitants, Calyong Campong 200 inhabitants, Amontey 520 inhabitants, Calona 120 inhabitants, Manapang 120 inhabitants.



The territories of Banjar extend a considerable way along shore on the West of the river, and also towards the interior, but the great mass of the population are not Moslems, but Dayaks. The principal districts are the following, Sibungu contains about 1000 huts, Biajo or little Dayak contains about 50 campongs, or negiries, with a very numerous population of Dayaks. Biajo or great Dayak contains 734 campongs, inhabited by the most numerous and powerful tribe of Dayak in the Island of Borneo, and who extend to the centre of the Island. The following districts are generally dependent on Banjar, but sometimes assert a dubious sort of independence, the Moslems being few in number and the Dayaks extremely numerous. Radermacher, in 1780, gives the estimated Moslem population, and mentions the names of different chiefs who appear to be Dayak. Mandawai, situated on the river of that name, contains about 200 Moslems and several thousand Dayaks. The chief in 1780 was Kyai Ingebai Suradi Rajah. Sampit situated on a much larger river, contains about 400 Moslems besides Dayaks, and the chief was Kyai Ingebai Sudi Ratu. Pambrang, situated on a smaller river, contains about 150 Moslems,

and the chief was Radin Jaya. Cota-ringin, which is situated on a large river, as is supposed more than 100 miles from the shore, boats being generally ten or twelve days in reaching it, contains about 600 Moslems or Malays, with a very powerful tribe of Dayak. The chief is stiled Ratu Cota-ringin, and his subjection to Banjar is more nominal than real.

The productions of Banjar are gold of a finer touch commonly than that of Sambas, which is only 7 touch, whereas that of Banyar is often 8 or 9, diamonds which are fine and large, but very dear, bird's-nests of the best sort to the quantity of about 50 peculs, wax, dragon's blood, bezoar of different kinds, rattans and matts. They have abundance of iron but no steel, with the mode of preparing which they are unacquainted. Pepper may be considered as the chief staple of the country. Most of the productions of Java, as Rice and Sugar, Salt and Opium find a ready sale at Banjar. Piece goods and china wares, especially porcelain are also in considerable request. The gold mines of Banjar, are said to lie very near the surface at the depth of about three fathoms. Those at Kirsan and Duku, which are very rich, lie in a red marle; above the mine there gene-

rally lies an incrustation like rattan wood, beneath which the gold-dust is found in a red earth. There is also an ore named Mas-aurong found in the same mines, with iron stone pebbles and sometimes chrystal.

The diamond mines of Banjar are situated among the mountains of the Biajus. They are found in a soil of carron black gravel at the surface, and the pits are sometimes carried to the depth of ten fathoms. The mines are wrought with very little skill, generally under the superintendence of a native Biaju who is termed the Malem. Gold-dust is often found in the same mine with the diamond. The Sultan claims all diamonds above the weight of five carats, but this claim is generally evaded.

The English seem to have been the first European nation that frequented Banjar Massing for purposes of trade, unless we suppose, as is extremely probable, that they were preceded by the Portuguese. According to Valentyn, the English began to trade to Banjar in 1609, while he states, that the Dutch only began to frequent Banjar or Martapura occasionally about 1644. About the year 1700, the English fixed themselves in Banjar, with about 40 English and 100 Bugis-men, at which time the

chief of Banjar had the title of Panambahan, and was of the family of Sumbava. In the course of the first year, differences occurred between the English and the Natives, and the English were successfull, and sacked five of their principal campongs, Banjar, Banjar Mas-sing, Cayu-tangi, Tatas and Cartapura. A pacification took place, and the English afterwards reduced their establishment to ten Englishmen and 40 Bugis-men. Hostilities again ensued in the year 1706, and the English were expelled, those who escaped proceeding to Batavia. In this year 1706, the Dutch began to trade to Banjar again, and continued it with some interruptions, but without forming a regular settlement till 1747, after which they formed their establishment at Tatas, which continued till it was abandoned by Daendels in 1807-8, about the time of the decline of the pepper trade.

It appears, that so early as the year 1690, the Portuguese had settled Missionaries at Banjar, and according to Valentyn, they enumerated between three and four thousand converts to the Catholic faith, soon after the commencement of last Century. Of the present state of these Christians I am ignorant.

*Of the Western Coast of BORNEO.*

The Western Coast of Borneo like the Eastern, has for a long time been broken down into a variety of small and feeble states. In earlier times, however, it seems to have been chiefly under the influence of the two states of Sacadina and Sambas, the most ancient and powerful of which was Sacadina. The Dutch began to trade to Sacadina in 1604, about which period the place possessed a considerable trade. In the year 1609, they entered into a treaty with Sambas, by which they bound themselves to support Sambas against Sacadina, and to abandon their trade to the latter place; the Sultan of Sambas, obliging himself in his turn to grant the Dutch a monopoly of the trade of Sambas to the exclusion of the Spanish, Portuguese, English, French, and other nations of Europe. In 1623, the Dutch finally abandoned their factory at Sacadina.

Sacadina, according to Valentyn, consisted about the beginning of last century of nearly 600 houses, being a town similar to Banjar Massing. At that period the Sultan was reckoned much richer, but less powerful than him of Banjar Massing, and it was thought that he

could not easily muster above 1000 men at arms. His influence however, extended over a great tract of country, commencing about the promontory of Kandu-wangan off the small island of Pulu-Manku, and extending along by Pagarun-timong, commonly termed Tanjong Sambar to the present town of Mattan, which lies about 40 miles to the South of the ancient Sacadina, and nearly the same from the mouth of the river Mattan. The ancient Sacadina was situated near the mouth of the river of that name, which is navigable by boats for 150 miles into the interior; of the town at present scarce a vestige remains. About 5 miles to the Northward of Sacadina lies the river Simpang, and the modern town of Simpang lies about 20 miles up the river. To the North-West of Simpang lie several large rivers, which run up from the bight of Sacadina towards Pontiana, nearly insulating the high land of Krimata or rather Karimata. From the point of Karimata lies a chain of Islands and Rocks, the principal of which are Panambangan, on the groupe nearest the shore, and Karimata and Soorutoo, which tend outside outwards towards Balitan. The isle of Karimata is inhabited, and produces iron and tin like Balitan. About

the year 1600, these islands were places of some consequence, and as much frequented by the traders of Sacadina as they have lately been by Pirates and Lamuns. The territories of Sacadina extended in ancient times to the modern Mampawa, if not still farther North, and included the river of Pontiana. In the time of Valentyn, the interior kingdom of Landak was also dependent on Sacadina. Landak was in the most ancient times a dependency on Sukapura in Java, and as Sacadina itself was regarded as a dependency of Bantam, on account of some ancient claims, the Javanese Princes from time to time asserted their pretensions to the sovereignty of the whole country of Sacadina, though generally unable to give either weight or colour to their pretensions. After the rise of Pontiana, however, in 1770, the Sultan of Bantam, lest his influence should be totally annihilated, consigned over to the Dutch the whole of his claims on these territories for the sum of Spanish Dollars 30,000. In 1776, the Dutch formed settlements at Pontiana and Landak. In 1786, they attacked Sacadina, then governed by Rajah Ali, who had abandoned Rhio or Riav. Sacadina was at this time a place of considerable trade, and though frequented some-

times by Dutch vessels, it had long been a subject of jealousy to that nation, from being the principal haunt of the English and French traders on the island of Borneo. The Dutch force employed against Sacadina, consisted of 500 Europeans and 1000 Javanese, with two large armed brigs, and a great number of proas. The Sultan of Pontiana sent along with them his son the present Rajah, with a number of armed Malay proas, and about 400 Bugese-men. Sacadina was sacked and burnt, but little property was seized, as the inhabitants escaped with the greater part of their property to Mattan. Since that period, Sacadina has never had any considerable trade, nor been re-settled to any considerable extent, though favourably situated for traffic in a country which affords all the common productions of Borneo, especially camphor, benjamin, dragon's blood, agar wood and rattans. Mattan is still governed by a branch of the family of the ancient Sultans of Sacadina, but this branch has long been proverbial for their stupidity. The river of Mattan and the territories subject to it which still comprehend the greater part of those which belonged to the ancient Sacadina, are all extremely well adapted to trade, and excite the cupidity



of his neighbours, especially Pontiana. The present Rajah, however, though no cruel tyrant, is generally despised as a besotted opium eater, who has neither taste nor abilities for state affairs. The Pirates of Lanuns, however, who occasionally haunt Panambangan, Karimata, and even Sacadina, are not harboured in Mattan, and the Rajah is at present on good terms with the Sultan of Pontiana. The most remarkable circumstance connected with Mattan is that the Rajah possesses the finest and largest diamond in the world, which has hitherto been discovered. This diamond, which is said to be of the finest water, weighs 367 carats. The celebrated pitt diamond weighs only 127 carats. The Mattan diamond is shaped like an egg, with an indented hollow near the smaller end. It was discovered at Landak about 90 years ago, and though the possession of it has occasioned numerous wars, it has been about 80 years in the possession of the Mattan family. Many years ago, the Governor of Batavia sent a Mr. Stuvart to ascertain the weight, quality, and value of this diamond; and to endeavour to purchase it, and in this mission, he was accompanied by the present Sultan of Pontiana. After examining it Mr. Stuvart offered 150,000 Dollars for the

diamond, the sum to which he was limited, and in addition to this sum two war brigs, with their guns and ammunition, together with a certain number of great guns, and a quantity of powder and shot. The Rajah, however, refused to deprive his family of so valuable a hereditary possession, to which the Malays attach the miraculous power of curing all kind of diseases, by means of the water in which it is dipped, and with which they imagine the fortune of the family is connected.

Mampawa, though situated to the North of Pontiana, requires our previous attention as an older state, which sprung up between Sacadina and Sambas, and at last became independent of either. Mampawa is situated near the mouth of a small river, and vessels may reach both the town and fort with their guns; being greatly resorted to by traders, especially English and Portuguese, it soon became a place of considerable importance.

According to Radermacher in 1780, it contained from one to two thousand houses. The Rajah had the title of Panambahan, which is regarded as the next in dignity to that of Sultan. At that time his name was Muscan al

Maderi, but he had given up the administration of affairs to his son Gusti Mas. In 1772, a war commenced between Mampawa and Sambas, concerning the possession of Monterado and Salakan, which lie between Mampawa and Sambas, but have generally been admitted to belong to the latter. These two settlements are chiefly occupied by Chinese, nearly 30,000 of whom are settled in them, and are extremely productive of gold-dust. The Mampawa-men having ravaged Salakan, the Sultan of Sambas, in his turn attacked Mampawa, and the Panambahan invited the mediation of Pontiana. This mediation succeeded, and the Sultan of Sambas withdrew his army, on receiving the sum of 10,000 Dollars, the greater part of which was advanced by the Sultan of Pontiana. After the retreat of the Sambas army, the Panambahan of Mampawa positively refused to re-imburse the Sultan of Pontiana, who in his turn attacked Mampawa. After a seige of three months, he was compelled to break up with loss from Mampawa, to which he found that Sambas supplied assistance. This was the foundation of the uninterrupted state of hostility, which has from that period subsisted between Sambas and Pontiana. The Sultan of Pontiana made another

attempt, with a small force supplied him by the Dutch, and was again baffled. After the destruction of Sacadina in 1786, however, they assisted him a third time, with an armament consisting of one vessel of 70 guns, another of 50 guns, a third of 30 guns, together with a large transport, and some smaller vessels, when Mampawa surrendered without firing a gun, and the eldest son of the Sultan was appointed Panambahan. The Rajah or old Panambahan escaped up the river, where he remained till he died. The Dutch established a factory at Mampawa of 32 Europeans, and a small sloop in the river, and divided the duties with the Panambahan, but abandoned it at the same time as Pontiana in 1790, after this, the new Panambahan permitted the son of the deposed Rajah to return to Mampawa, and reside in a private capacity with a small establishment, and the empty title of Rajah.

Sambas is situated about 30 miles up the river of that name, and the territory runs a considerable way into the interior, and is rich in gold-dust. About the year 1600, and also about the year 1700, this appears to have been a considerable state, and to have extended its sway far into the interior. This is the first of the Eastern

States with which the Dutch formed an exclusive treaty, and at that time the chief appears to have had the title of Sultan. In every period, however, this state has been more distinguished for its piracies than its commerce, and has been always addicted to aggressions on its neighbours. For the last ten years especially, it has been notorious over all the East, as the common haunt of every description of Pirates and Lannuns, and it has forfeited every title to be considered as a trading state, or as a state, the existence of which is consistent with either the safety of commerce or the safety of its neighbours. It now appears that great numbers of the Pirates and Sea-rovers of the East have settled at Sambas, and intermarried with the ancient inhabitants.

### *Of PONTIANA.*

As Pontiana is of more recent origin than any other of the Malay states, so it is almost the only one in which the rise can be accurately traced. The account of the origin of Pontiana was procured by Mr. J. Burn, from the late Sultan, who was its founder and his principal associate in the course of a residence of several

years at that place, and communicated lately to Mr. Raffles, together with the result of his enquires concerning the interior of the island of Borneo. The information thus collected has every claim to authority, and is the more valuable, because it illustrates in a striking manner the origin of the other Malay states, the greater number of which may be fairly considered as counterparts to Pontiana.

Pontiana was founded in 1770, by Seyyad Abdul Rehman, the son of Seyyad Hassan, by a woman of inferior rank, and born at Mattan. His father, Seyyad Hassan, was a native of Arabia, highly respected among the Malay Rajahs who had married at Mattan. He afterwards took up his residence at Mampawa, where he died a few months before Pontiana was founded. He had several wives, and left several children, but none of them distinguished themselves but Abdul Rehman. The latter possessing great abilities, intrepidity, and a most insinuating address, soon became an enterprizing and successful Merchant, and realized considerable property. He married a sister of the Sultan of Banjar, and also a sister of the Rajah of Mampawa, but generally resided at Banjar Massing. Possessing a brig or sloop, and several war proas

of his own, besides several merchant vessels, he applied vigorously to commerce, frequenting Coti, Passir, Palembang, and other Malay ports, but seldom visiting Java. His operations, however, were not entirely confined to commercial pursuits, but when favorable opportunities occurred, he showed no greater repugnance to piracy than is usual among the Arabs. He had already cut off a Dutch vessel in the vicinity of Banca, and an English one at Passir, and done many things which were highly disapproved by the venerable Seyyad, his father, when at last, about a year or eighteen months before his father's death, he succeeded in cutting off at Passir a French ship, with a very rich cargo, by which he incurred the displeasure of his father, who renounced all further communication with him. The manner in which the ship was cut off, however, he deemed so discreditable, that he never would relate the story, though he admitted the fact, alledging, that previous to this transaction, some of his vessels had been stopped by the French, and his women ill treated. An old woman, who had been the Sultan's Concubine, and who had borne a material part in the transaction, related the following circumstances to Mr. Burn, after the death of the Sultan.

After having greatly ingratiated himself with the French Captain, he informed him that he intended to present him with two beautiful slave girls, at the same time expressing a desire to see the ship. The French Captain invited him on board, catching at the bait, and Seyyad Abdul Rehman promised to bring the slave girls with him. The Captain prepared an entertainment, and saluted him as he came on board, which he did with several followers properly instructed, but apparently unarmed. He sat down with his people, and partook of the entertainment, after which, he called the two women he had brought, one of whom was the Concubine who related the story. Abdul Rehman pointed to the Concubine, and desired the Captain to conduct her to his cabin, the Captain did so, and the woman, as she had been instructed, secured the door. The rest of the Frenchmen were all on deck, as well as a number of his Malay followers. Abdul Rehman gave the signal with his hand, and the whole of them were instantly creased, the lascars, at the same time throwing themselves into the sea, according to their usual practise. The Captain was then put to death, and the vessel secured. When Abdul Rehman heard of his father's indignation at his con-



duct, he left Passir, and when he had almost reached Mampawa, he was informed of his death. Resolving now to settle at Sango, in the interior of Borneo, he entered the river of Pontiana or rather Lava, and proceeded up it about twelve miles to the conflux of the river of Landak, with that of Pontiana, anchoring for the night at the point where the rivers join. In the morning, being struck with the situation of the place, which had never been inhabited, he determined to settle it, and proposing the plan to his followers, most of them acceded to it, but a few objected and left him. After repeated discharges of his great guns loaded with shot, into a small island near the point, Abdul Rehman landed, cut down some trees, displayed his colours, and prayed for success to the undertaking.

Having erected a small house for the night, he slept a shore, and named the place Pontiana or rather Pontianak, which is the name the Malays give to a spectre of the forests, which appears in the form of a winged female; this was in the year 1770. He then built a Mosque on the small island, which still remains, having been renewed on the same spot, and a fort on

the point of land, which commands the entrances of the rivers of Sango and Landak, whither he also brought up the French ship. The crew of this vessel he employed as slaves in clearing the jungle, and his followers built houses along the banks of the river;—such was the foundation of Pontiana. As soon as Abdul Rehman was settled in his new residence, he visited Mampawa to pray over the tomb of his father, whose forgiveness he had never procured, and this ceremony he continued to perform at stated periods until the year of his death.

As the traders to Landak, Sango, and other settlements in the interior of Borneo, were necessitated to pass by Pontiana, Seyyad Abdul Rehman daily acquired new settlers by his insinuating address and the protection which he was ready to afford the traders against the Lanuns, and he was joined by several Bugis and Chinese traders from Mampawa, Sambas, and other Malay ports. He next applied to Rajah Haji of Reaw, who conferred on him the title of Sultan of Pontiana. By what right such a title was conferred it is impossible to conjecture, but he immediately assumed the title, and established a Court in a very expensive style. His profusion attracted new followers and he was joined by va-

rious Arabs, who, though they impaired his fortune, yet for the time encreased his consequence. By these means, Pontiana, in the space of a single year became a considerable settlement, and attracted the jealousy of the Rajah of Landak. The Rajah of Landak was at this time a dependant of the Sultan of Bantam, and being alarmed at the reports which he heard, that the Sultan of Pontiana intended to block up the river and engross its trade, he dispatched an embassy to Pontiana, to enquire what were his intentions. The Sultan of Pontiana, though he professed that his intentions were not of a hostile nature, took care to display his power and fired off his great guns repeatedly in their presence. They transmitted to Bantam a very exaggerated account of the strength of Pontiana, the consequence of which was, that the Sultan of Bantam conceiving himself unable to protect Landak, resigned it to the Dutch. In 1776 the Dutch sent a strong force from Batavia to Pontiana to establish themselves in their newly acquired possessions, and the Sultan of Pontiana, intimidated by their power, allowed them to settle at Pontiana, where they built a stockade fort and mounted on it six guns. They also established a factory, consisting of a Resi-

dent, a Secretary and his clerk, a Surgeon, a Captain with a Subaltern, and 25 European soldiers. They also stationed an armed cutter in the river which was likewise manned with Europeans, so that they had altogether about 100 Europeans, but no native soldiers. The Dutch now imposed what duties they pleased, and allowed the Sultan but a very small share of them, which circumstance, together with his profuse manner of living, compelled the Sultan to run deeply in debt. In the year 1786, the Dutch, assisted by the force of Pontiana, destroyed Sacadina and Mampawa, in the latter of which they placed the Sultan of Pontiana's eldest son as Panambahan, establishing there a factory of their own, dependent on that of Pontiana. Previous, however, to the settlement of the Dutch at Pontiana, it was visited by a French frigate, commanded by the brother of the French Captain, whom the Sultan had formerly cut off at Passir, and who had been dispatched for the express purpose of attacking him, but as the frigate could not pass the bar, and durst not send in her boats to attack the place, she was able to effect nothing, and was compelled to return after destroying a few proas at the mouth of the river, which had never had any concern in the crime of the Sultan.

In the year 1790 the Dutch withdrew their factories from both Pontiana and Mampawa, after a residence of 14 years, finding that though they had imposed what duties they pleased, and given the Sultan only what share they liked, their profits were far from compensating the expence of the establishment. We have no detail of the expence and profits of this factory unless for the year 1779 when the expence amounted to about 884 pounds sterling and the receipts only to about 160 pounds. The residence of the Dutch at Pontiana was not without occasional misunderstandings occurring between them and the Sultan. One of the most serious of these seems to have originated entirely from their ignorance of Malay customs. Soon after the settlement of the factory at Pontiana a siri or prepared betel was presented by a male slave to the Surgeon. Among the Malays this is regarded as an overture to an intrigue from some female of rank, but the Surgeon was ignorant of this custom, and the slave had retired without speaking a word. The Surgeon holding the siri in his hand met the Sultan, and related to him the circumstance, expressing his surprize at what it could mean. The Sultan requested

him to point out the person who had brought it which he did immediately, and the slave being seized confessed that the siri had been sent by one of the Sultan's concubines. The Sultan immediately, without farther explanation, ordered the slave's head to be cut off in the presence of the Surgeon, and the woman was dispatched privately. The Dutch Resident and the rest of the factory took the alarm and declared that they would return to Java. The Sultan endeavoured to pacify them, but in vain, and they retired to Batu Layang, a solitary rock, on which a fort is built about five miles below Pontiana. Here they fortified themselves and posted the armed cutter and firing upon all proas, attempted to block up the river. The Sultan repeatedly attempted to persuade the Resident to return, but finding all remonstrances in vain, he represented the matter to Batavia, when the Resident was re-called and another sent in his place, who returned and took up his residence in Pontiana.

During the residence of the Dutch at Pontiana a good deal of illicit trade had been carried on by the English, with the connivance of the Dutch Resident, the ships anchoring only without the mouth of the river, but after the facto-

By was withdrawn Pontiana became a resort of English traders, and was also frequented by the Portuguese from Macao, and the Arabs from Muscat and Mocha. It was also visited by numerous proas from all parts of Borneo, Bali, Lombok, Sumbawa and Java. This, however, only continued till Pulu Penang began to flourish, since which time it had greatly decayed. The Java trade was nearly extinguished by the war between the Dutch and English, the prohibition of the export of dollars from Java, and some unjustifiable acts of the Sultan in swindling many of the Javanese owners out of their cargoes.

Sultan Abdul Rehman died after a short illness, February 26th 1808, about the age of 70 years. When he perceived himself dangerously ill, he assembled the chief men, and told them he appointed his eldest son, the Panambahan of Mampawa, to succeed him, and dispatched a person to summon the Panambahan into his presence. Next day the chiefs assembled, and declared that they desired the Pangerang to be Sultan who was his second son, but by an inferior wife, and that they would abandon the place if the Panambahan was to succeed him, accusing him of cruelty and divers

acts of murder and poisoning, especially the poisoning the Master of a Chinese junk to whom he was indebted about 8000 dollars, and the assassination of Captain Sadler, to whom he was indebted 30,000 dollars. They added that they expected his bad conduct would speedily place them in the same situation as Sambas and probably draw on them the resentment of the English.

The Sultan assented and told them since they desired it, the Pangerang would be the Sultan. The Panambahan arrived next day and was informed of this resolution. When he came into his father's presence the old man severely reprobated his conduct and advised him to go in pilgrimage to Mecca. The Sultan also sent for Mr. Burn, whom he had sometime before swindled out of a valuable cargo, and having requested his forgiveness, desired him to beware of the Panambahan, as a man of naturally bad heart, and after his death to have no interviews with him unless in public. On the death of the old Sultan, the second brother, desirous of not being involved in his father's debts, declined the honor of being Sultan. The head-men, however, were at first refractory, and it was sometime before they could be brought to acknow-



ledge him as Sultan, which he only accomplished by dint of presents and promises, engaging to discharge his father's debts so soon as possible, while he gave up many of his own claims, especially those which were due by the Arabs.

The deceased Sultan was a man of fine presence and the most respectable appearance, possessed the most insinuating address and imposing manners. Profuse and ostentations in his habits, he scrupled at no means, however bare, for raising money to support this exterior state, and as he was perfectly versed in every species of deception, and always supported the appearance of wealth, he seldom failed to procure credit from strangers. He concealed his debts with the utmost care, and was in the constant habit of contracting one debt to discharge another, often selling goods for that purpose at a large discount on what he had bought them. By this means his debts and his difficulties went on gradually accumulating to his death. The most considerable part of his debts were incurred to the Bugis traders, and in consequence of this, the Sultan was obliged to wink at many irregularities of those traders, in regard to avoiding the usual Port duties. The Chinese repeatedly made him offers to farm the duties of the port,

but to this he would not consent, foreseeing the disputes that were certain of arising between the Bugis and Chinese. In the midst of these difficulties, however, the Arabs and other religious impostors prevailed on him to advance to them large sums of money, which they never thought of refunding; thus with all his dissimulation, becoming the dupe of hypocrisy. He seems always to have displayed more of the character of the artful trader than of the Sovereign, though it must be owned, that he exhibited considerable suppleness and dexterity in ruling the motley mass of subjects which he had collected at Pontiana.

In punishment he was uncommonly severe and even barbarous. In his own family the faults of his domestics, especially his women, were punished in the most cruel manner, and by the most infamous sort of tortures, sometimes pouring boiling water into the privities of the females, or burning them alive with their paramours on the suspicion of incontinence.

The present Sultan since the death of his father, has conducted himself in such a manner as in a great measure to efface the former dislike which was entertained of him by the people, carefully avoiding the most prominent errors of

his father's character. He has endeavoured to liquidate his father's debts, but has found them so enormous, that a long period must elapse before this can possibly be effected. Carefully avoiding all superfluous expense and the contracting of new debts, he has attempted to establish better regulations. He gradually dismissed the Arabs and religious impostors, who had preyed on his father's credulity, and attempted likewise to compel the Bugis traders to pay the usual duties. In this however, he has never been able to succeed, and many of them have left Pontiana, in consequence of his measures, neither are the Chinese traders so numerous as they formerly were.

The present Sultan has been engaged in no hostilities excepting with Sambas, which is still the inveterate enemy of Pontiana. Shortly after the death of the old Sultan of Pontiana, the chief of Sambas attacked Mampawa, and had very nearly taken the fort. Immediately on receiving intelligence of it, the present Sultan proceeded to Mampawa with 2000 men, and defeated the Sambas army, taking their guns, and a number of prisoners, all of whom, even the women, were put to death at Pontiana, and their heads exposed publicly. The union of the La-

nuns with the chief of Sambas, has however, given that chieftain a decided preponderance at sea.

The mouth of Lewa or Pontiana river lies about 3 or 4 miles to the N. of the equator. The bar at the entrance has only from 11 to 12 feet at high spring tides, but above this the river is very deep to an immense distance, and the strength of the current seldom exceeds from 3 to  $3\frac{1}{2}$  miles an hours, and is generally less. The anchorage in the roads is safe and free from shoals, and the weather, even in October, which is the worst month, is never so bad as to interrupt the regular intercourse between the ship and the shore. About 7 miles from the mouth of the river, at Balu Layang, there is a fort on each side of the river, with 14 or 15 guns mounted, being 18 and 24 pounders; on the North side of the river and on the South side, directly opposite, a number of smaller guns. The town of Pontiana is about 12 miles from the mouth of the river, where there is likewise a fort, and some armed vessels stationed.

In the town and bounds of Pontiana, there are settled about 3000 Malays, 1000 Bugis, 100 Arabs, and about 10,000 Chinese, besides these

who are the free inhabitants, there are a considerable number of Slaves, many of whom are Javanese, and the rest of all the other Eastern tribes; there are also a few run-away Lascars from different vessels. The character of the Malays is nearly the same at Pontiana as in other Eastern towns; phlegmatic, indolent and proud, and few of them possess much wealth. The Arabs live by trade; they are generally poor when they settle, but are respected on account of their religious character by the Malays. They are, however, neither such æconomists as the Bugis, nor so expert as the Chinese in trade, and at present few of them possess property to the amount of 20,000 Dollars. The Chinese seldom acquire property above this amount at Pontiana, though they are industrious and expert in trade. They are fond of good living, and addicted to gambling, opium, and merry making. They follow the occupations of merchants, mechanics and labourers, cultivate the ground, distill arrack, make sugar, search for gold-dust, and trade to the interior as well as along the Coast. The Chinese of Monterado and Salakan, two places very near each other, and situated a short way to the North of Mam-

pawa, and who are estimated at 30,000, receive from Pontiana all their supplies of opium, piece goods, iron, and China articles. The Bugis at Pontiana chiefly apply themselves to trade, the manufacture of Bugis cloth, and the working of raw silk into cloths. Many of them are possessed of very large property, amounting to above 100,000 Dollars. They are generally poor when they come from Bugis-land, but soon acquire property from uniting frugality with dexterity in trade. They are extremely æconomical and even penurious in their manner of living, inso-much that the daily expence of a Bugis-man's family, however great his property may be, does not amount to above 3 or 4 wangs, when the meanest Chinese labourer will continue to spend a Rupee; and a wang at Pontiana is only the 12th part of a Rupee.

The Sultan allows them to cultivate as much ground as they please, without any consideration for the same, but they seldom avail themselves of this permission, permitting their domestic slaves only to till as much as serves for their own subsistence. In navigation, the Bugis seem to have been stationary probably for these thousand years; the proas in which they sail from Pontiana to Pulu Penang, Java, Bali,

or any similar place, generally cost from 150 to 300 Dollars, and the whole outfit, as far as respects sails, cordage, provisions, stores, &c. for one of these voyages, seldom exceeds the sum of 40 or 50 Dollars, while the amount of the cargo is generally from 10 to 40,000 Dollars. The crews receive no wages, but only a share of the adventure, according to the regulations of the Undang-undang. Many of these proas are lost at sea, but few taken by pirates, as they defend themselves desperately and never surrender.

The duties at Pontiana on sales are 6 per cent on all piece goods, one Dollar per pecul on iron, ditto on steel, ditto on tin, ditto on salt petre, 50 Dollars per chest on opium, bee's-wax from the interior, 2 Dollars per pecul. The trade of Pontiana, however, has greatly declined. Formerly it was annually visited by from 8 to 15 Chinese junks; at present, however, they never exceed the number of 5. Two or three small junks come annually from Siam, but the value of their cargoes is only about 7 or 8000 Dollars each.

In 1810, the Imports at Pontiana on English ships amounted to 210,000 Dollars, of which, there were 95 chests of opium, which averaged

1000 Dollars per chest. The quantity of opium and piece goods imported by the Bugis, was probably much greater, but as they never submit to be searched, it cannot be accurately known. The Bugis at Bali and some other ports, are exempted from duties, and they are always anxious to avoid them in every port. Formerly the ports in the straits of Macasar, especially those on the Borneo side, as Coti and Passir, were chiefly supplied with opium, piece goods, iron and steel, from Pontiana and Sambas; a small quantity being supplied by Java and Riaw, and the returns, which were very rich, consisting chiefly of gold, wax, and bird's-nests, found their way into Pontiana. These ports, however, have for some time been supplied from Pulu Penang.

The China junks come to Pontiana in February, with China articles, and sail about the end of June, taking in return gold, bird's nests, sea-slug, fine camphor, wax, rattans, black-wood for making furniture, red-wood for dyeing, and sometimes opium, tin and other articles. As they cannot take their full return in rough produce, they are obliged to take a large amount in gold, though they always prefer produce, as there is a loss upon gold in China.



The Sultan of Pontiana has a regular disciplined force, but all the inhabitants are obliged to act as soldiers when necessity requires. The Malays and Bugis are always ready and willing to turn out for battle, and the Chinese are obliged to assist likewise in case of any emergency, though the Malays place little or no confidence in them. When an alarm has been given, the whole force of the place has repeatedly, as Mr. Burn asserts, turned out in half an hour or less, and the activity displayed on such occasions forms a striking contrast to the usual listlessness of a Malay town. They manufacture their own powder and shot at Pontiana.

The soil of Pontiana is low and marshy, but the climate is healthy, and the only distemper from which they suffer is the small pox, which makes great havock among them, as they are unacquainted with either inoculation or vaccination. Pontiana does not produce so much rice or fruit as the settlements of the interior, but this is only through the defect of cultivation. There is abundance of sea and river fish, and the Chinese raise great quantities of stock, especially hogs, which are both cheap and excellent in quality.

*Of the DAYAK.*

The Dayak are the most numerous class of inhabitants on the Island of Borneo, they occupy nearly the whole of the interior, and are probably the aborigines of the Island. They are divided into a great variety of tribes, which are independent of each other, and vary in dialect, but have a general resemblance in language, custom and manners. In the districts South and West they are generally denominated Dayak, in the North, Idaan, and in the East, Tirun or Tedong. Perhaps, however, on more minute investigation, some characteristic distinctions may be established between these races, at present we are warranted to consider them as the same original stock. The manners of the Dayak are characterized by some strange peculiarities and uncommon features of barbarism, but the spirit of these traits has never been elucidated, nor the system of religious or superstitious opinion with which they are connected, examined. Europeans have had very little opportunity of attending to the manners or habits of the Dayak; and the Malay, Bugis or Arab traders, the only persons who are in the habit of frequenting the interior of Borneo, can give little account of the country, beyond mentioning the distance of one place

from another in days journies, and the different articles of trade which are to be procured at different places. In the following sketch the authority followed with respect to the Southern tribes is that of Radermacher, whose observations chiefly apply to the tribe of Banjar, named Biaju. With regard to the East and North, the chief authorities are Dalrymple and Forrest, and with regard to the West the authority of Mr. Burn, who had not only the opportunity of consulting many traders of Pontiana, who were in the habit of visiting the interior, but had himself seen several hundreds of the tribes of Mampawa and Sango, several of whom could converse in the Malay Language.

In appearance, the Dayak are fairer and handsomer than the Malays, they are of a more slender make, with higher fore-heads and noses, their hair is long, straight and coarse, generally cut short round their heads. The females are fair and handsome. Many of the Dayak have a rough scaly scurf on their skin, like the jakong of the Malay peninsula. This they consider as an ornament, and are said to acquire it by rubbing the juice of some plant on their skin. The female slaves of this race which are found among the Malays have no appearance of

it. The Dayak wear no cloaths but a small wrapper round the loins, and many of them tattoo a variety of figures on their bodies. Their houses are formed of wood, dark and devoid of windows, but often of such size that several families live together in the same house, sometimes amounting to the number of a hundred persons.

Though the Dayak are reckoned indolent by the Malays, it does not appear that the charge is well established. Wherever they are settled they cultivate a great quantity of rice; they in many places apply themselves assiduously to collect gold-dust, though in this occupation they are greatly inferior to the Chinese, and are generally found very useful in working the diamond mines. In some places too, they carry on a considerable trade in rattans and damar which they collect from the forest. In their diet the Dayak are subject to few restrictions, eating hog, and also many kinds of vermin, as rats and snakes. The arms of the Dayak are the sumpit or blow-pipe, which has generally a small spear-head fixed at the top, and a large heavy iron knife or parang, which they sling in a wooden scabbard. They are very dexterous in throwing small poisoned arrows with the

sumpiti, and are acquainted with the most deadly poisons, especially one which is produced from the juice of a tree found in Borneo and also in Java. In the construction of their boats and some of their utensils, the Dayak display considerable ingenuity. Few of them are acquainted with the use of fire-arms, excepting in the vicinity of Banjar, and the Malays are anxious to keep them in this ignorance.

In manners they are described as a mild and simple people, and though their superstitious opinions occasion great enormities among them, yet it is admitted by the Moslems, that when any of them happen to be converted to that religion, they become exemplary for the propriety of their conduct.

In Government they are regulated in their own villages, like the jakong, by the advice of the elders. In some places, however, they have their own chiefs, who possess a degree of authority analogous to that of the Malay Rajahs.

In regard to letters, it does not appear that they ever had any knowledge of them, and in consequence of this, it is impossible to trace their origin. Their own traditions on this head are

represented as excessively wild and incoherent, but it does not appear that they have ever been collected. The Sulus have a notion, that the Idaan of the North are descended from the Chinese, an opinion which seems merely to have originated from the fairness of their complexion. Dalrymple has mentioned one of the legends connected with this opinion (Orient. Repository Vol. 1. Page 559) which runs thus, "The Emperor of China sent a great fleet for the stone of a snake, which had its residence at Keeney Balloo, the number of people landed was so great as to form a continued chain from the sea, and when the snakes stone was stolen, it was handed from one to another till it reached the Boat which immediately put off from the shore, and carried the prize to the Junks, which immediately sailing, left all those who were ashore behind, though their dispatch was not enough to prevent the snake's pursuit, who came up with the junks and regained his treasure." This is not a tradition which can throw any light on the origin of the Dayak. It resembles a Malay fable about the snakes or Nagas, which figure nearly as much in the romances of the Malays as among those of the Hindus, among whom Naga obviously signifies a mountaineer as well as a snake.

In religion, the Dayak acknowledge the supremacy of the maker of the world, whom they term Devata or Dewatta, and to whom they address prayers as its preserver. They hold particular kinds of birds in high veneration, and draw omens from the sounds which they utter and from their flights. One of the principal of these is a large species of white-headed kite, which preys on fish, snakes and vermin. By some, they are said to hold the sun and moon in particular veneration, and to worship them, but when Mr. Burn interrogated them on this point, they steadily denied it. In all their wars, journies, and in short all matters of importance, they pay the utmost attention to the omens of birds, and sometimes too they endeavour to penetrate the secrets of futurity by consulting the entrails of birds. Their ceremonies of a religious kind are few, but many of them are dreadfully barbarous.

At the birth of a child, during the parturition they summon a conjurer, who is termed Balian, instead of a midwife, and who, instead of lending any assistance to the woman, beats a gindang, and sings to it till the child is born.

With regard to their funereal ceremonies, the corpse is placed in a coffin, and remains in the

house till the son, the father, or the nearest of blood can procure or purchase a slave, who is beheaded at the time that the corpse is burnt, in order that he may become the slave of the deceased in the next world. The ashes of the deceased are then placed in an earthen urn, on which various figures are exhibited, and the head of the slave is dried and prepared in a peculiar manner with camphor and drugs and deposited near it. It is said that this practice often induces them to purchase a slave guilty of some capital crime, at five fold his value, in order that they may be able to put him to death on such occasions.

With respect to marriage, the most brutal part of their customs is that nobody can be permitted to marry till he can present a human head of some other tribe to his proposed bride, in which case she is not permitted to refuse him. It is not, however, necessary that this should be obtained entirely by his own personal prowess. When a person is determined to go a head-hunting, as it is very often a very dangerous service, he consults with his friends and acquaintances, who frequently accompany him or send their slaves along with him. The head-hunter then proceeds with his party in the most cautious man-



ner to the vicinity of the villages of another tribe, and lies in ambush till they surprize some heedless unsuspecting wretch, who is instantly decapitated. Sometimes too they surprize a solitary fisherman in a river or on the shore, who instantly undergoes the same fate. When the hunter returns, the whole village is filled with joy, and old and young, men and women hurry out to meet him, and conduct him with the sound of brazen cymbals, dancing in long lines, to the house of the female he admires, whose family likewise comes out to meet him with dances, and provide him a seat, and give him meat and drink.

He still holds the bloody head in his hand, and puts part of the food into its mouth, after which the females of the family come, and receive the head from him, which they hang up to the ceiling over the door. The betrothing of the bride then takes place, when the husband must present her with one or more slaves, a couple of cloths, and an earthen urn or pitcher adorned with figures. On the day of the marriage ceremony, the bride and the bridegroom are both dressed very fine in their manner, and a feast is held in each of their houses. The bridegroom comes in state to the house of the bride, where one of the friends receives him at the door,

and streaks him with the blood of a cock; and also streaks the bride with the blood of a hen. When the blood spreads too wide, it is reckoned a bad omen. The parties then join their bloody hands, and the ceremony concludes with another feast.

If a man's wife die, he is not permitted to make proposals of marriage to another, till he has provided another head of a different tribe, as if to revenge the death of his deceased Wife. The heads procured in this manner they preserve with great care, and sometimes consult in divination. The religious opinions connected with this practice are by no means correctly understood. Some assert that they believe that every person whom a man kills in this world, becomes his slave in the next. The *Idaan*, it is said, think, that the entrance into Paradise is over a long tree which serves for a bridge, over which it is impossible to pass without the assistance of a slave slain in this world. Some of the *Idaan* of the North reckon Paradise to be situated at the top of *Kinibelu*, and guarded by a fiery dog, that seizes on all virgins as they attempt to pass.

The *Idaans* are religious observers of oaths. They have a religious form likewise, by which

they adopt strangers into their tribes. They pronounce a certain form of words, and then cut a rattan, the person to be adopted does the same, after which, he and all his relations are considered as adopted. They generally massacre all prisoners of war, the chief striking the first stroke. When they take a hostile chief prisoner, they preserve his whole body with camphor, with his arms extended, and place cowries in the sockets of his eyes.

The practice of stealing heads causes frequent wars among the different tribes of the Idaan. Many persons never can obtain a head, in which case they are generally despised by the Warriors and the Women. To such a height it is carried, however, that a person who had obtained eleven heads, has been seen by Mr. Buru, and he pointed out his son, a young lad, who had procured three.

The Dayak do not practise polygamy. When a married woman commits adultery, the husband wipes off his disgrace by murdering one, two, or three of his slaves, and sometimes chastises the unfaithful wife with blows. When a man, of his own accord, wishes to separate from his wife, he resigns her cloaths and ornaments, and pays her besides a forfeit of 20, 25, or 30 Spa-

nish Dollars, after which he may marry another. The Dayak have some vestiges of ordeal amongst them. When charges of theft occur, they take a pot and put into it some ashes of a particular kind and taking two copper pice, one in the name of the accuser and the other of the accused, and placing them on a stick athwart the pot, after certain incantations they reverse them into the pot and decide the process in favor of the party whose pice is most whitened.

Before the Dayak engage in any journey, war, head-hunting, or indeed any matter of importance, they endeavor to procure omens from the kites, and invite them by screaming songs, and scattering rice before them. If these birds take their flight in the direction they wish to go, it is regarded as a favorable omen, if they take another direction they reckon it is unfavorable, and delay the business till the omens appear more favorable.

*END OF THE VIIth VOLUME.*







